PLANT QUARANTINE PROCEDURES MANUAL

for the
Plant Quarantine Unit
Ministry of Agriculture
Barbados

Prepared under TCP-BAR-3401(2) - Development of Manuals for Quarantine Inspection Officers in Barbados

Ministry of Agriculture, Barbados
FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS
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<th>Full Form</th>
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<tr>
<td>AHFS</td>
<td>Agricultural Health and Food Safety</td>
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<td>APHIS</td>
<td>United States Agricultural Plant Health Inspection Service</td>
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<tr>
<td>CABI</td>
<td>CAB International</td>
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<tr>
<td>CARDI</td>
<td>Caribbean Agricultural Research and Development Institute</td>
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<tr>
<td>CITES</td>
<td>Convention on International Trade in Endangered Species</td>
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<td>FAO</td>
<td>Food and Agriculture Organisation of the United Nations</td>
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<tr>
<td>GIS</td>
<td>Geographic Information System</td>
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<tr>
<td>GMC</td>
<td>Genetically Modified Crops</td>
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<tr>
<td>GMO</td>
<td>Genetically Modified Organisms</td>
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<tr>
<td>HACCP</td>
<td>Hazard Analysis and Critical Control Points</td>
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<tr>
<td>IICA</td>
<td>Inter-American Institute for Cooperation on Agriculture</td>
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<tr>
<td>IP</td>
<td>Phytosanitary Import Permit</td>
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<tr>
<td>IPM</td>
<td>Integrated Pest Management</td>
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<tr>
<td>IPPC</td>
<td>International Plant Protection Convention (FAO)</td>
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<tr>
<td>ISPM</td>
<td>International Standard for Phytosanitary Measures</td>
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<tr>
<td>LMO</td>
<td>Living Modified Organism</td>
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<tr>
<td>MAFFWRM</td>
<td>Ministry of Agriculture, Food, Fisheries and Water Resources</td>
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<tr>
<td>MOA</td>
<td>Ministry of Agriculture</td>
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<tr>
<td>NAHFSA</td>
<td>National Agricultural Health and Food Safety Agency</td>
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<tr>
<td>NCC</td>
<td>National Conservation Commission</td>
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<tr>
<td>NPPC</td>
<td>National Plant Protection Committee</td>
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<tr>
<td>NPPO</td>
<td>National Plant Protection Organization</td>
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<tr>
<td>PC</td>
<td>Phytosanitary Certificate</td>
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<tr>
<td>PFA</td>
<td>Pest Free Area</td>
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<tr>
<td>PPU</td>
<td>Plant Protection and Plant Quarantine Unit</td>
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<tr>
<td>PQ</td>
<td>Plant Quarantine</td>
</tr>
<tr>
<td>PQU</td>
<td>Plant Quarantine Unit</td>
</tr>
<tr>
<td>PR</td>
<td>Public Relations</td>
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<tr>
<td>PRA</td>
<td>Pest Risk Analysis</td>
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<tr>
<td>RPPPO</td>
<td>Regional Plant Protection Organisation</td>
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<td>RPPPO</td>
<td>Regional Plant Production and Protection Officer</td>
</tr>
<tr>
<td>SLC</td>
<td>FAO Sub Regional Office for the Caribbean (Barbados)</td>
</tr>
<tr>
<td>SLC-SRC</td>
<td>SLC Regional Coordinator</td>
</tr>
<tr>
<td>SOP</td>
<td>Standard operational procedures</td>
</tr>
<tr>
<td>SPS</td>
<td>Sanitary and Phytosanitary Measures, WTO Agreement</td>
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<tr>
<td>SWPM</td>
<td>Solid wood packing material</td>
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<tr>
<td>TCP</td>
<td>Technical Cooperation Programme</td>
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<tr>
<td>TOR</td>
<td>Terms of reference</td>
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<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
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<tr>
<td>UWI</td>
<td>The University of the West Indies</td>
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<tr>
<td>WICSCBS</td>
<td>West Indies Central Sugar Cane Breeding Station</td>
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<tr>
<td>WHO</td>
<td>World Health Organisation</td>
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<td>WTO</td>
<td>World Trade Organisation</td>
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The Ministry of Agriculture, Food, Fisheries and Water Resources (MAFFWR), Barbados identified the development of Plant Quarantine Manuals as a high priority, given the high incidence of intra-regional and international trade and the high volume of human traffic into and out of the country. The spread of pests and diseases is a real threat, and Barbados must be able to protect its animal, plant and human health. It is incumbent on the country to modernize and strengthen the national agricultural health and food safety regulatory services in order to ensure that safe products are traded and sold. It is also necessary to ensure consistency in the delivery of services by the Plant Quarantine Unit, in compliance with relevant international agreements signed by Barbados. Since the MAFFWR does not currently have the resources needed to develop the necessary Inspection Manuals, a request was made to the Food and Agriculture Organization of the United Nations (FAO) to provide the necessary technical assistance for compiling the Manuals, inclusive of Standard Operating Procedures (SOPs). A project was developed under the Technical Cooperation Programme (TCP), in close collaboration with the Plant Quarantine Unit, MAFFWR and approved in July 2012.

Activities towards the development of the Manual were conducted by Dr. Lyall Winston Small (Expert Consultant) in two Missions between September 2012 and January 2013. During the first Mission, the Consultant held discussions with relevant stakeholders and developed the framework for, and content of, the Manual. Under the second Mission, three training workshops (3-day duration each) were conducted, for which participants, drawn from the Plant Protection and other units of MAFFWR, provided inputs into the Manual and SOPs. Finally, a one-day national consultation was held at which the Manual and SOPs were presented to several public and private stakeholders for feedback. Thus, the Manual and SOPs have been developed with full stakeholder participation.
The Barbados Plant Quarantine manual is designed as a hands-on tool for use by Plant Quarantine officers to carry out their everyday duties related to protecting the plant germplasm of Barbados from the direct and indirect effects of introduced pests and diseases that might enter the Island through various channels.

The manual comprises four interrelated sections that are based on current practice in Barbados as well as relevant International Standard for Phytosanitary Measures (ISPMs). The information provided is compliant with international best practice for the phytosanitary activities that are currently used to protect Barbados’ plant resources by the Plant Quarantine Unit (PQU). The sections are as follows:

1. Section 1 deals with the Import Regulatory system
2. Section 2 deals with Export Regulatory systems
3. Section 3 deals with the general overall Plant Quarantine Inspection systems
4. Section 4 deals with Surveillance operations that are usually managed by subject matter specialists but are central to the work of the PQ unit and involve significant PQU input.

This document is intended to be used as a computer based comprehensive reference resource by PQU Management and Staff as well as relevant personnel in other sections of the Ministry including the Planning Unit and the Plant Protection subject matter specialist staff.

In addition, the PQ manual is linked to a hands-on Standard Operational Procedures (SOP) Manual for conducting the various operations involved in implementing a Barbados Plant Quarantine system that is compliant with modern international and regional guidelines and standards for the proper implementation of a modern Plant Quarantine system. The SOP is a subset of the operational aspects of this manual that outlines the various activities involved in carrying out the everyday operations involved in plant quarantines from the perspective of a frontline Plant Quarantine Officer.

A number of general references that are relevant to the operations of the Plant Quarantine system in Barbados are appended as standard references on best practice by the Plant Quarantine service in Barbados. These are linked in the PQU manual. Foremost amongst them are the various ISPMs of the International Plant Protection Convention (IPPC) of the FAO that relate specifically to Plant Quarantine operations from an international perspective.

The ISPMs are rooted in general phytosanitary theory, but although very relevant to the operationalization of Plant Quarantines in Barbados, do not treat with some specific aspects of the PQ system that might be of overarching relevance to Barbados. Similarly the recent update of the FAO Plant Quarantine Inspection Manual for the Caribbean is regional in scope and was not intended to be a dedicated Plant Quarantine Manual for Barbados.
The following Appendices are an integral part of the Manual.

Appendix 1  Phytosanitary Import Permit Request Form
Appendix 2  Phytosanitary Import Permit Application Register
Appendix 3  Application for Import Inspection Form
Appendix 4  Commodities Inspection Form
Appendix 5  Phytosanitary Detention Form
Appendix 6  Ship Inspection Form
Appendix 7  Non compliance form
Appendix 8  Model Phytosanitary Certificate
Appendix 9  Model Re-Export Phytosanitary Certificate
Appendix 10 Flowchart of inspection activities for export certification
Appendix 11 Phytosanitary requirements determination checklist
Appendix 12 Export Appointment Application form
Appendix 13 General Packing House Requirements for Agricultural Exports
Appendix 14 Packing House Checklist
Appendix 15 MAFFWRM guidelines for importation of fresh fruit, vegetables and other plant products
Appendix 16 List of Adopted International Standards for Phytosanitary Measures
Appendix 17 Other References
Appendix 18 Some features of Methyl Bromide fumigation
Appendix 19 Requirements for import applications
1.1 Objective
This Plant Quarantine Manual is created as a working guide for The Barbados Plant Quarantine Officers to assist them in the performance of their duties at the ports of entries and at any other authorized facility where imported material is held. The Manual describes the following areas:

- Procedures for Plant Quarantine import inspection and the use of Import Permits
- Procedures involved in the export certification process and the use of Phytosanitary certificates
- Quarantine inspection procedures for the clearance of aircraft and vessels and their cargoes, quarters, storage places and passengers as well as other places and pathways in which regulated pests may be found
- Procedures involved in Surveillance activities

1.2 Legal Framework
The Barbados Plant Protection Act of 2007 and the Plant Pest and Disease (Eradication) Act of 1985 are the prime legal authorities under which Plant Quarantines operate in Barbados. These Acts (which are presently undergoing amendment and upgrading) and their regulations give Officers the right to enter and access properties, examine commodities for import and exports, enter and examine carriers and warehouses, take samples for determination, verification or testing, and impose reasonable measures concerning treatments and/or disposal of prohibited or uncertified commodities. Plant Quarantines are also legally buttressed through the Sanitary and Phytosanitary (SPS) convention of the World Trade Organisation (WTO) (1995) and the IPPC convention of FAO (1997). Other adjunct legislation related to Plant Quarantines is The Pesticides Control Act and its regulations of 1974-75, the Protection of new Plant Varieties Act (2000-17) and the Convention on International Trade in Endangered Species (CITES) Act.

1.3 Infrastructure
The Plant Quarantine service is responsible for all phytosanitary actions in all port areas including nearby surrounding areas as the very nature of the activities that take place at ports of entries are high risk from a phytosanitary perspective. It is, therefore, essential that the following minimal requirements are in place for allowing proper work by the PQU:

- Adequate working sites within the ports of entry and exit
• Familiarity with and access to current Plant Quarantine legislation and regulations of Barbados
• Familiarity with and access to quarantine legislation and regulations of trading partners
• Adequate inspection facilities and equipment (work space or desk with appropriate lighting, microscope or good hand lens, flashlight, knives, forceps, vials, plastic bags, etc.)
• Quarantine/Target Pest List - This list should comprise the highest priority organisms of phytosanitary significance in terms of their potential threat to agricultural production and forestry and should be categorized as a result of the Pest Risk Analysis (PRA) process
• Data sheet for each pest on the target pest list
• World distribution maps of pests of quarantine importance
• Official forms, record books, orders and regulations related to Plant Quarantine
• Manual of Inspection Procedures
• Import permits (copies), where appropriate
• Insect and disease taxonomic keys
• Databases on quarantine pests
• Updated information on pest outbreaks
• Plant Quarantine Treatment Manuals
• Pest Surveillance Manual
• Up to date Copies of the International Standards for Phytosanitary Measures (ISPMs)
• Copy of the International Plant Protection Convention (IPPC) and the World Trade Organization/Sanitary and Phytosanitary Measures (WTO/SPS) Agreements
• Copy of all legislation directly related to Plant Quarantines in Barbados.

1.4 The Plant Quarantine System

The Plant Quarantine system in Barbados comprises a number of regulatory and operational activities that together are designed to prevent the entry, establishment and spread of regulated pests in Barbados. Central to the Plant Quarantine system is the Plant Protection Act (2007) and the Plant Pest and Disease Eradication Act (1985) which together provide the legal umbrella under which the various agencies and individuals operate.
The role of the Plant Quarantine Unit (PQU) within the Ministry of Agriculture is, therefore, to prevent the entry, establishment and spread of regulated pests in Barbados and to support the access of Barbados’ agricultural and other products of quarantine significance to foreign markets through the certification of their phytosanitary status in conformity with the requirements of the importing country.

The Unit provides the following services:

- Excluding the entry and establishment of new significant pests into Barbados
- Providing assurance to importing countries that consignments exported from Barbados are free from pests of quarantine significance through globally accepted export certification practices
- Promoting safe trade by creating awareness of rationales for Plant Quarantine actions among customers and by effectively implementing transparent policies
- Assisting in undertaking surveys (jointly with other agencies) for establishing the presence or absence of regulated pests in order to control, contain or eradicate them
- Assisting in performing the Pest Risk Analyses that are required to establish the phytosanitary requirements for the importation of plants, plant products and regulated articles in relation to the phytosanitary situation in the countries of origin
- Issuance of Import Permits establishing the phytosanitary requirements for specific consignments and origins
- Verifying the conformity of the imported consignments through internationally accepted inspection procedures.

The Plant Quarantine Unit collaborates with a number of other Governmental agencies in carrying out its functions. These include sister agencies in the Plant Protection and other technical and administration departments of the Ministry of Agriculture, The Police Department, the Ministry of Trade, the Ministry of Health and the Customs Department. Its clients also include businesses involved in the trade of agricultural products or other products of plant quarantine interest and the general public, in relation to their activities that might impinge on the movement of pests into, out of and within Barbados.

1.5 Definitions

Additional declarations: A statement that is required by an importing country to be entered on a phytosanitary certificate and which provides specific additional information pertinent to the phytosanitary condition of a consignment [FAO, 1990; revised ICPM, 2005]
Clearance (of a consignment): Verification of compliance with phytosanitary regulations [FAO, 1995]

**Commodity class:** A category of similar commodities that can be considered together in phytosanitary regulations [FAO, 1990]

**Consignment:** A quantity of plants, plant products and/or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate (a consignment may be composed of one or more commodities or lots) [FAO, 1990; revised ICPM, 2001; PPA, 2007]

**Contraband:** Smuggled goods that are imported into or exported from a country in violation of its laws.

**Country of origin:** Of a consignment of plants, a country where the plants were grown; of a consignment of plant products, country where the plants from which the plant products were derived were grown; of other regulated articles, country where the regulated articles were first exposed to contamination by pests [FAO, 1990; revised CEPM, 1996; CEPM, 1999]

**Grain:** A commodity class for seeds intended for processing or consumption and not for planting (see seeds) [FAO, 1990; revised ICPM, 2001]

**Import Permit:** Official document authorizing importation of a commodity in accordance with specified phytosanitary requirements [FAO, 1990; revised FAO, 1995; ICP, 2005; PPA, 2007]

**Inspector:** Person authorized by the National Plant Protection Organization to discharge its functions [FAO, 1990; PPA, 2007]

**Inspection:** Official visual examination of plants, plant products or other regulated articles to determine if pest are present and/or to determine compliance with phytosanitary regulations [PPA 2007]

**IPPC:** International Plant Protection Convention, as deposited in 1951 with FAO in Rome and as subsequently amended [FAO, 1990; PPA, 2007]

**Intended use:** Declared purpose for which plants, plant products, or other regulated articles are imported, produced, or used [ISPM 16, 2002]

**Interception (of a consignment):** The refusal or controlled entry of an imported consignment due to failure to comply with phytosanitary regulations [FAO, 1990; revised FAO, 1995]

**Lot:** A number of units of a single commodity, identifiable by its homogeneity of composition, origin etc., forming part of a consignment [FAO, 1990]

**National Plant Protection Organization (NPPO):** Official service established by a government to discharge the functions specified by the IPPC [FAO, 1990; ICPM, 2001; PPA, 2007]

**Pest:** Any species, strain or biotype of plant, animal, or pathogenic agent, injurious to plants or plant products [FAO, 1990; revised FAO, 1995; IPPC, 1997; PPA, 2007]
Phytosanitary: Pertaining to plant quarantine


Phytosanitary measure: Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests [FAO, 1995; revised IPPC, 1997; ISC, 2001; PPA, 2007]

Phytosanitary regulation: Official rule to prevent the introduction and/or spread of quarantine pests, by regulating the production, movement, or existence of commodities or other articles, or the normal activity of persons, and by establishing schemes for phytosanitary certification [FAO, 1990; revised; FAO, 1995; CEPM, 1999; ICPM, 2001]

Plants: Living plant and parts thereof, including seeds [FAO, 1990; revised IPPC, 1997; PPA 2007]

Plants for planting: Plants intended to remain planted, to be planted or replanted [FAO, 1990]

Plants in vitro: A commodity class for plants growing in an aseptic medium in a closed container [FAO, 1990; revised CEPM, 1999; ICPM, 2002 formerly plants in tissue culture]

Plant product: Un-manufactured material of plant origin (including grain) and those manufactured products that, by their nature or that of their processing, may create a risk for the spread of pest.

Processed wood material: Products that are a composite of wood constructed using glue, heat and pressure, or any combination thereof [ISPM, 2002]

Quarantine Pest: A pest of potential economic importance to the area endangered and not yet present there, or present but not widely distributed and being officially controlled [FAO, 1990; revised FAO, 1995; IPPC 1997; PPA, 2007]

Raw wood: Wood which has not undergone processing or treatment [ISPM 15, 2002]

Re-exported consignment: Consignment that has been imported into a country from which it is then exported. The consignment may be stored, split up, combined with other consignments or have its packaging changed (formerly country of re-export) [FAO, 1990; revised CEPM, 1996; CEPM, 1999; ICPM, 2001; ICPM, 2002]

Regulated article: Any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harboring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved [FAO, 1990; revised FAO, 1995; IPPC, 1997; PPA, 2007]

Regulated non quarantine pest: A non-quarantine pest whose presence in
plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party [IPPC, 1997, PPA, 2007]

**Regulated pest:** A quarantine pest or a regulated non-quarantine pest [IPPC, 1997]

**Release (of a consignment):** Authorization for entry after clearance [FAO, 1995]

**Round wood:** Wood not sawn longitudinally, carrying its natural rounded surface, with or without bark [FAO, 1990]

**Sawn wood:** Wood sawn longitudinally, with or without its natural rounded surface with or without bark [FAO, 1990]

**Seed:** A commodity class for seeds for planting or intended for planting and not for consumption or processing (see grain) [FAO, 1990; revised ICPM, 2001]

**Soil:** means wholly or partially derived from the upper layer of the earth's crust which is capable of sustaining plant life and which contains solid organic substances such as pats of a plant, humus, peat or bark, but excluding any medium which is sterile, composed entirely of unused peat or otherwise incapable of harbouring or transmitting pests [from Cap 266 Laws of Barbados] [PPA, 2007]

**Stored product:** Un-manufactured plant product intended for consumption or processing, stored in a dried form (this includes in particular grain and dried fruits and vegetables) [FAO, 1990]

**Treatment:** Officially authorized procedure for killing, removal or rendering infertile of pests [FAO, 1990, revised FAO, 1995; ISPM No. 15, 2002; ISPM No. 18, 2003; ICPM, 2005; PPA, 2007]

**Wood:** A commodity class for round wood, sawn wood, wood chips or dunnage, with or without bark [FAO, 1990; revised ICPM, 2001]

**Wood packaging material:** Wood or wood products (excluding paper products) used in supporting, protecting or carrying a commodity (includes dunnage) [ISPM 15, 2002]
2.1 Overview – Framework

The Phytosanitary Import Regulatory System is one of the three major aspects of a Plant Quarantine system, which are the Import Regulation, Export Facilitation and General Phytosanitary Inspection. The Import Regulatory system comprises a variety of activities that are substantially carried out at the various ports of entry on consignments of goods or other occurrences of products that have the potential of introducing regulated pests into the country. The system depends to a large extent on document verification, identity checking and phytosanitary inspection.

2.2 Operations

The operations described below relate to specific operational aspects involved in the regulation of Plant Quarantine importations and the proper use of Phytosanitary Import Permits.

2.2.1 Plant Quarantine Import Inspection

The import inspections performed by the PQ Unit are designed to verify the conformity of imported consignments with the phytosanitary requirements of Barbados in order to prevent the entry and spread of regulated pests. General inspection procedures include document verification, identity checking and phytosanitary verification. Specific inspection procedures for phytosanitary verification of consignments of different classes of commodities are also given.

2.2.1.1 Submission of Application for Quarantine Import Inspection and Release

At the time of arrival, the Importer shall submit to the PQ Unit an application for Import inspection in the prescribed format (see Appendix 3). The application must be accompanied by the following:

- a copy of the Import Permit,
- the Phytosanitary Certificate (PC) (and the re-export PC if applicable) and
- Invoice documents

2.2.1.2 Verification of application

A PQU Inspector shall examine the application for the following:

- Import permit
- Commodity, quantity, country of origin
- Relevant information on the Importer
- Any other required documents

2.2.1.3 Acceptance / Rejection of Application
When the application does not provide the required information or documents, the Inspector will advise the Importer immediately. An application that does not conform to the specifications of the Import Permit (IP) or one that has not been released from the IP requirement shall be rejected.

2.2.1.4 Document Verification
The Inspector will check to see that the consignment information and the Phytosanitary Certificate are in conformity with the Import Permit.

2.2.1.5 Phytosanitary Certificate (PC) check:
The Inspector will carefully verify details in the PC, paying attention to the following:

- Are the additional declarations in compliance with the phytosanitary requirements specified in the import permit?
- Is the certificate an original print? Does it have a serial number given by the Plant Protection Service of the exporting country?
- If the certificate is not original, but a copy, it should be verified by means of an affixed signature and stamp from the Plant Protection Service of the exporting country. A copy of the original certificate may be accepted if there are acceptable reasons why the original certificate is not attached to the consignment.
- If there are any changes made after the issuance of the PC, and if these changes have been verified by signature and date of a verifiably authorized inspector of the exporting country.
- If the detailed information in the certificate is the same as in the import permit, inspection application and in trading documents.
- Is the country of origin, the one authorized on the import permit, and if an IP is not required, are there any restrictions or conditions concerning the country of origin?
- The identity of the commodity: Is the information in the PC clear enough? Are there any restrictions or conditions concerning the particular commodity?
- Are the requested treatments indicated in the PC?
- Is the certificate dated, signed and stamped by an authorized inspector? Are the signature and stamp originals?
- Is the period between the date of issuance of the certificate and the date of arrival of the consignment no longer than the authorized period?
- Is the date of the consignment in the PC earlier than the date of issuance of the IP?
- In cases where the phytosanitary certificate is an e-phyto, this should be in the form established in the ISPM 12.
If there are no relevant faults or any reason to believe that the consignment is not in compliance, then the identity checking and phytosanitary inspection will be carried out. In addition, the time of inspection with the Importer/Broker is to be confirmed.

2.2.1.6 Re-export Certificate

Consignments arriving into the country may have passed through several countries since leaving the country of origin. If the consignment has passed through several countries without being exposed to pest infestation, without being split into smaller parts, and without having their packaging changed, it may continue to its destination with the original Phytosanitary Certificate attached to it.

If the consignment has been imported into some other country, or has been inspected and perhaps stored, split into smaller parts and repacked, and is then expected to continue into the country of destination, it should have both a Re-export Certificate and the original certificate or certified copy attached.

It may be that only the copy of the original Phytosanitary Certificate and original Re-export Certificate are available when consignments arrive in the country. In this instance the copy will be accepted, only if it is stamped, signed and proven to be identical to the original certificate by the Plant Health Inspector of the country of re-export.

When the documents are in conformity, the Inspector shall confirm the date, time and place of inspection with the Importer, determine the sampling plan for the consignment and perform the inspection.

If the documents are not in conformity, the Importer shall be advised immediately by the concerned Inspector; and, depending on the kind of irregularity, the consignment will be detained or rejected.

2.2.1.7 Identity Checking

The purpose of identity checking is to verify that the consignment consists of the products that are indicated in the PC and the other import documents. The Inspector shall verify the following:

- plant species and if possible, varieties
- quantities in the consignment (compare the information in the different documents)
- registration numbers of containers and information concerning the transport vehicles (identification of ships, containers etc).

2.2.1.8 Phytosanitary Checking

The purpose of phytosanitary checking is to verify the phytosanitary status of commodities, with particular reference to the presence of regulated pests.

The Inspector shall visually inspect the consignment for conformance with the specifications made in the Import Permit, as well as to ensure that the consignment is free of infestation by regulated pests, soil and weed contamination.
Where necessary, samples shall be taken for pest diagnostic or for the purpose of verifying the Additional Declaration.

2.2.1.9 Responsibilities of the Inspector

In relation to the inspection of imported consignments, the Inspector is responsible for the following:

- document checking
- identity checking
- phytosanitary checking
- reporting to PQ management any situation on non-conformity detected during the inspection
- taking routine decisions on the release, detention or rejection of the consignment.

In accordance with the results of the inspection, the Inspector shall decide on the following:

- Release of the consignment. If, upon inspection, the Inspector determines that the consignment fulfills all the requirements, he shall authorize the release.
- Detention of the consignment. If, upon inspection, the Inspector determines that the consignment is not accompanied by the required documentation, or requires laboratory tests, or presents a risk of the introduction or spread of regulated pests, the Inspector shall detain the consignment and immediately serve written notice to the Importer by issuing a Phytosanitary Detention Form (see Appendix 5) specifying that some or all of the imported items shall be subject, within the time period specified in the notice, to document regularization, laboratory test, or the application, under official supervision of the phytosanitary measures specified.
  - When detention is for documentary reasons, and the documents have not been regularized at the end of the time limit established in the notice given to the Importer, the Inspector shall make a decision regarding the rejection/destruction of the consignment or the application of phytosanitary measures, if they can be identified and are appropriate for the case.
  - When detention is for the purpose of performing laboratory tests, when the results of the tests are available, the Inspector shall take a decision on the release, rejection or the application of phytosanitary measures, including the extension of the detention period.
  - When the detention is for the application of phytosanitary measures, and such measures have been executed under official supervision and their efficacy has been verified, the Inspector shall take a decision on the final release or rejection/destruction of the consignment.
• Rejection of the consignment. If, upon inspection, the Inspector finds that the consignment is not in conformity with the phytosanitary requirements and that there are no alternative phytosanitary measures to adequately mitigate the associated phytosanitary risks, or when the required level of efficacy of those measures has not been reached, the Inspector shall decide on the rejection/destruction of the consignment. The Inspector shall notify the Importer of this decision and give the Exporter the option to reship or destroy the consignment, under official supervision, within a time-limit that shall be given in the Phytosanitary Detention Form.

2.2.1.10 Inspection fees
Fees for PQ inspection activities are calculated according to the schedule as per the Regulations (to be drafted) of the Barbados Plant Protection Act. Upon receipt of the fee, the responsible PQ Office shall issue an official receipt.

2.2.1.11 Inspection at final destination or outside of regular working hours
• Inspection of consignments may be undertaken at the Importer’s premises, if the Importer requests that service using the appropriate form and the facility has been approved by PQU for such inspections.
• The Importer shall meet any charges applicable to inspections done outside regular working hours.
• Inspections may be performed during non-working days or time if the Importer requests that service and the request are approved by the PQ Unit, subject to the fees established.

2.2.1.12 Responsibilities of the Importer, Owner or Agent
The Importer, Agent or Owner of the consignment is responsible for doing the following:
• Submit the Inspection application and supply the Import Permit number for the commodity in question.
• Supply the Phytosanitary Certificate attached to the consignment and the related trading documents.
• Unload cargo, open bags for inspection and re-load consignments after inspection
• In case the consignment is rejected or subject to phytosanitary measures, the Importer or Owner shall carry out the destruction, repacking, assorting, treatments ordered by the Inspector, or arrange the reshipment of consignment back to the exporting country or some other country at his expense and within the time ordered by Inspector.
• Not move or treat a consignment, held under Phytosanitary detention, without the previous authorization of the Inspector.
2.2.2 Phytosanitary Import Permits

2.2.2.1 General Procedures
The importation into Barbados of any plant, plant product or regulated article requires a Phytosanitary Import Permit which is issued by the Plant Quarantine Unit of the Plant Protection Division.

The Phytosanitary Import Permits, issued by the PQU, establish the phytosanitary requirements that the particular consignment must comply with in order to allow its entry into the country. Any release of the Phytosanitary Import Permit requirement will be decided by the Plant Quarantine Unit (PQU) on the basis of the place of origin, plant commodity class and the phytosanitary risk category of the product.

2.2.2.2 Phytosanitary Requirements
Phytosanitary requirements contained in the Phytosanitary Import Permits are established through Pest Risk Analyses according to the procedures and guidelines established by the relevant IPPC ISPMs. A “CASE” is identified by a combination of the product code and the Place of Origin code as determined by the following characteristics:

The Product Code
1. Genera and species
2. Plant part: tuber, true seed, mini-tuber, leaf, etc. (Plant part codes)
3. Level of processing: natural, de-barked, dehydrated, etc (Processing codes)
4. Intended uses: consumption, propagation (Intended use code)
5. Transgenic origin: Yes or No
<table>
<thead>
<tr>
<th>INTENDED USE</th>
<th>CLASS</th>
<th>COMMODITY CLASS DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROPAGATION/REPRODUCTION</td>
<td>Class 1</td>
<td>Plants for planting, except subterranean parts and seeds</td>
</tr>
<tr>
<td></td>
<td>Class 2</td>
<td>Bulbs, tubers and roots: subterranean parts assigned for propagation</td>
</tr>
<tr>
<td></td>
<td>Class 3</td>
<td>Seeds: true seeds in their botanical definition assigned for propagation</td>
</tr>
<tr>
<td>CONSUMPTION/TRANSFORMATION</td>
<td>Class 4</td>
<td>Fruits and vegetables: fresh parts of plants assigned to consumption or processing and not for planting</td>
</tr>
<tr>
<td></td>
<td>Class 5</td>
<td>Ornamental cut flowers and foliages: cut portions of plants, including the inflorescences, assigned to decoration and not for planting</td>
</tr>
<tr>
<td></td>
<td>Class 6</td>
<td>Woods, barks, cork: processed, semi-processed or non processed</td>
</tr>
<tr>
<td></td>
<td>Class 7</td>
<td>Includes packing and support material and similar products of plant origin and any other material used to transport, protect and/or adapt regulated articles</td>
</tr>
<tr>
<td></td>
<td>Class 8</td>
<td>Soils, peat, and others materials of support</td>
</tr>
<tr>
<td></td>
<td>Class 9</td>
<td>Grains: refer to cereals, oleaginous, leguminous seeds and other seeds intended to be consumed and not for planting</td>
</tr>
<tr>
<td>OTHER</td>
<td>Class 10</td>
<td>Any other regulated article that it is not included in the previous classes</td>
</tr>
<tr>
<td>RISK CATEGORY</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>CATEGORY 0</td>
<td>Products of plant origin that, because of the nature of their processing, packing and transport, cannot constitute a pest pathway and do not need phytosanitary control, nor any intervention by the NPPOs</td>
<td></td>
</tr>
<tr>
<td>CATEGORY 1</td>
<td>Processed products of plant origin intended for consumption, or transformation that are subject to any technological denaturizing process, which transforms them into products unable to be affected directly by crop pests, but may be a pathway for storage pests through their packing materials and means of transport</td>
<td></td>
</tr>
<tr>
<td>CATEGORY 2</td>
<td>Semi-processed plant products (subject to drying, cleanliness, separation, etc.) which can shelter pests and whose intended use is consumption or transformation</td>
<td></td>
</tr>
<tr>
<td>CATEGORY 3</td>
<td>Plant products “in nature” intended to be used for consumption, or transformation</td>
<td></td>
</tr>
<tr>
<td>CATEGORY 4</td>
<td>Plants for planting, including all seeds, plants or other materials of vegetal origin, assigned for propagation, reproduction or to remain planted</td>
<td></td>
</tr>
<tr>
<td>CATEGORY 5</td>
<td>Any other plant, plant part or regulated article, not included in previous categories, that involves phytosanitary risk based on PRA</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 – Commodities in Risk Category 1

<table>
<thead>
<tr>
<th>TYPE</th>
<th>EXAMPLES OF COMMODITIES IN RISK CATEGORY 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extracts</td>
<td>Vanilla extracts; Fruit Pectin; Guar bean derivative; Hop extract; Hydrolysed vegetable protein; Margarine; Mineral plant extracts; Soybean lecithin; Starch -(potato, wheat, maize, cassava)</td>
</tr>
<tr>
<td>Fibres</td>
<td>Cardboard; Cellulose cotton piece goods; Cotton cloth; Cotton lint; Paper; Plant fibre cloth and threads; Plant fibre for industrial production; Plant fibre for industrial production; Semi-processed plant fibres and related materials (eg sisal, flax, jute, sugarcane, bamboo, juncus, vimen, raffia)</td>
</tr>
<tr>
<td>Foodstuffs ready for consumption</td>
<td>Cacao powder; Cakes and biscuits; Ketchup; Chocolate; Condiments; Dessert powder; Dips; Food colouring, Food flavouring, Food seasoning; Food supplements; Frozen French Fries; Frozen food; Fruit sauces; Jelly, Jam, marmalades; Mashed potato (dried); Nut Butter; Pastes (cocoa, quince, peanut butter); Pie filling; relish; Salad dressing; Sandwich spread; Sauce, sauce mix; Seasoning, seasoning mix; Soup (dried); Vegetable flavouring</td>
</tr>
<tr>
<td>Fruits and Vegetables</td>
<td>Candied; Canned; Concentrates; Freeze-dried; Fruit pie filling; Glazed; Hydrolyzed; In syrup; Pickled; Pomace; Precooked or cooked; Pulped</td>
</tr>
<tr>
<td>Grain and Oilseed products</td>
<td>Baby cereal; Bakery mixes; Bread products; Breakfast cereals; Bulgur wheat (parboiled, dried and ground); Cassava products (tapioca, fermented and/or fried derivatives for food; Cooked cereals; Corn chip pellets; Flour and industrial products made of cereal or oilseeds and leguminous derivatives for food and feed; Hominy, corn grits; Rice (parboiled); Corn soy blend; Soy Flour whey; Soy meal; Soy pellets; Soy proteins</td>
</tr>
<tr>
<td>Liquids</td>
<td>Alcohols; Coconut water (packed); Corn soy milk; Fruit drink juices (fruit and vegetable including concentrates, frozen nectar); Oils; Soft Drinks; Soup; Vinegar; Wood turpentine</td>
</tr>
<tr>
<td>Sugars</td>
<td>Beet sugar; Corn starch glucose; Corn syrup; Dextrine; Dextrose; Dextrose hydrate; Fructose; Granulated sugar; Glucose; Maltose; Maple sugar; Maple syrup; Molasses; Sucrose; Sugar; Sweetener; Syrup; Treacle</td>
</tr>
<tr>
<td>Wood products</td>
<td>Charcoal; Ice lolly sticks; Laminated beams; Match sticks; Plasterboard; Plywood boxes; Toothpicks; Wood pulp; Wood resin</td>
</tr>
<tr>
<td>Other</td>
<td>Brewer’s yeast; Brewer’s malt; Coffee (roasted); Dietary formula; Enzymes; Gum turpentine; Humate; Rubber (Crepe gums); Scents; Shellac; Tea; Vitamins</td>
</tr>
</tbody>
</table>
The Place of Origin Code
Place of production: country (and/or in special cases the specific areas of production such as Pest Free Areas).

General Phytosanitary requirements will be established for the Commodities classes and Risk Categories. Specific phytosanitary requirements will be established for the cases, through PRA, taking into consideration the pest risk at the country of origin.

ISPM 32 gives guidance on the categorization of commodities according to their pest risk.

Appendix 18 details the items of information that may be required by the PQU in order to properly process the Import permit.

2.2.2.3 Application for a Phytosanitary Import Permit

The Importer applies to the Plant Quarantine Unit for a Phytosanitary Import Permit by completing an application form for the import of plants/plant products/regulated articles (see Appendix 1).

The Importer provides a range of information through the application including the following:

- The Common and scientific names, plant part, intended use, transgenic origin (if applicable) and country of origin
- Quantity to be imported, point of entry, approximate date of arrival
- Name and address of Importer
- Plant Quarantine Registration numbers where applicable

Application for a Phytosanitary Import Permit must be made well in advance of the shipment since a Phytosanitary Certificate dated before the date when the Import Permit was issued is invalid and, therefore, will not be accepted.

2.2.2.3.1 Registration of the Application
Upon receipt, the application will be registered with a number and date into the Phytosanitary Import Permit Application Register (see Appendix 2).

2.2.2.3.2 Fee for a Phytosanitary Import Permit
Many countries require that the Importer pays a prescribed fee for a Phytosanitary Import Permit to the PQ Unit’s office, as provided under relevant regulations of the Plant Protection Act, at the time the application is submitted. An official receipt for the payment indicating the amount and the date, as well as the official number assigned to the Application, is normally issued.

2.2.2.3.3 Phytosanitary Import Permit Issuance
On satisfactory receipt of all required information, the Phytosanitary Import Permit is issued by the Plant Quarantine Unit. Each Import Permit must have a unique number.
In instances where the particular “Case” has already been considered (that is a PRA already exists), the Phytosanitary Import Permit will be issued as soon as practicable. However for “new cases”, or when the phytosanitary conditions at the country of origin have changed, requiring the conduct of a new PRA, the time of issuance will depend on the quality of the information provided to the PQU by the National Plant Protection Organization (NPPO) of the exporting country, inter alia.

2.2.2.3.4 Importer’s Responsibilities
It is the responsibility of the Importer to do the following:

- Provide the correct information required in the Application for Import Permit form (see Appendix 1)
- Assist the PQ Unit to source the necessary information to complete the PRA.
- Make available the issued Phytosanitary Import Permit to the Exporter or NPPO of
  - the exporting country before the Phytosanitary Certificate for the particular consignment has been issued
- Request that the Import Permit number be recorded in the Phytosanitary Certificate.

2.2.2.3.5 Records
Copies of the Application for Phytosanitary Import Permit, along with the Phytosanitary Import Permit issued, must be maintained at the issuing office. All relevant entries shall be entered into the Phytosanitary Import Permit Register in the prescribed format (see Appendix 2).

2.2.3 Special considerations in reference to the importation of some items of Agricultural Interest
2.2.3.1 Insects and Disease Organisms
Regulated insect pests are only allowable into the country through a process in which an approved scientific establishment is granted a permit to do so for special and well documented scientific purposes. The permit details the conditions under which the regulated pest can be brought into the island, the safeguard mechanisms that have to be put in place to ensure that the pest is contained in absolutely secure facilities, the design of the facility in which the pest will be kept, the regularity and scope of inspections by qualified Plant Protection and/or other PQ personnel, the means of disposal of the pest when the research is completed, etc.

All Plant Quarantine Officers should be apprised of the documented exceptions and conditions that have been made in such cases.
2.2.3.2 Organisms/Species protected under CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a multilateral treaty whose aim is to ensure that international trade in specimens of named identified wild endangered animals and plants does not threaten the survival of such endangered species in the wild. Barbados is a signatory. CITES works by subjecting international trade in specimens of listed species to certain controls. These require that all import, export, re-export and introduction of species covered by the Convention have to be authorized through a permitting system, and non compliance is subject to confiscation, inter alia. The PQ unit should be kept up to date on the current listing of Species protected under CITES to ensure that Barbados lives up to its commitments under CITES. The current list is on the CITES webpage which is linked in Appendix 17. The Barbados list is maintained by the Ministry of the Environment. It includes a number of rare Orchid species as well as two new registered species of Strelitzia developed by Mr. Jeff Chandler of The University of the West Indies (UWI), Cave Hill.

2.2.3.3 GMOs, LMOs and GMCs

Genetically Modified Organisms (GMOs), Living Modified Organisms (LMOs) and Genetically Modified Crops (GMCs) are not specifically dealt with in the IPPC ISPMs. Hence, there are no guidance documents for them as ISPMs. However, there is some cover for these new organisms, including crops, within the conduct of PRAs for quarantine pests in which countries determine the risks associated with these organisms and develop their requirements for either the importation or export of such organisms. Guidance on how these organisms should be treated in PRAs is contained in Annex 2 and 3 of ISPM 11.

The PQU is the best placed governmental agency in Barbados to deal with the regulation of these organisms. Under the draft Biosafety Act and the Draft bill to bring the National Agricultural Health and Food Safety Agency (NAHFCA) into being, the PQU will be responsible for identifying if the regulated article is indeed a GMO/LMO. If it is food/feed, then they will alert the National Biosafety Coordinator who will be in NAHFCA. Indeed a risk assessment MUST be carried out prior to the import of any such planting material and an import permit granted if the risk assessment is favourable. If this document (along with whatever other documentation is required) is not presented or has not been granted, then the plant SHALL not be allowed entry.

2.2.3.4 Miscellaneous Agricultural Inputs (Fertilizers, Pesticides, Other materials)

Agricultural inputs like fertilizers, hormones, pesticides, adjuvants, etc. are not strictly known or considered as pathways for transmittal of regulated pests and so would not normally be considered as responsibilities under the purview of a PQ department. However, the Barbados PQ unit is considered to be the most appropriate agency in Barbados to handle the inspections for such inputs. The parameters for such regulation are as follows:
For pesticides – An Import Permit is required along with the label being in English. The Pesticide Secretariat should then be contacted to find out if the documentation is accurate. (this could be done by email). If the documentation does not support the import, then the shipment is detained and the information handed over to the pesticide secretariat for further action.

2.2.3.5 Soil, Turf planting material, Sand primarily for road construction
The above materials that are usually shipped in bulk should be subject to Import Permit considerations to limit the risk of regulated pests entering the country on these pathways. In general, the process requires that the prospective Importer requests an Import Permit detailing the rationale for the importation and all the attendant parameters, including safeguards. The Quarantine unit considers the application, and a PRA is developed. An important aspect of the PRA would be the collection of information from the source area on possible regulated pest incidence, usually verified by a visit to the source area by a high ranking PQ official qualified in the relevant subject areas. That Officer would also verify the feasibility of any proposed treatments at source for ensuring the phytosanitary safety of the importation. The process should be so structured as to minimize a priori inputs from a non-technical policy standpoint.

2.2.3.6 White potatoes
The importation of white potatoes may be considered a special case, not only because of a risk of the product being the pathway for introduction of specific regulated pests, but also because they are often contaminated with significant amounts of soil, and such soil might transport nematodes and other pests. It is considered that it might be worthwhile to develop a PRA for white potatoes and use that PRA for the development of phytosanitary measures for the white potato pathway, if such is deemed necessary. Standardization of the amount of soil on potatoes that would trigger phytosanitary action is important, and the PPU should design an experiment to develop a quick test for determining this amount.

2.2.3.7 Used Vehicle Imports
Used motor vehicles and implements especially farm vehicles should be thoroughly cleaned, both internally and externally before arrival in Barbados. A used vehicle must be free of soil and road grime, plant matter and seeds. It is the Importer’s responsibility to ensure each vehicle is clean and free of all quarantine risk material, including live insects, seeds, soil, mud, clay, animal faeces, animal material, plant material such as straw, twigs, leaves, roots, bark, food refuse and other debris prior to arrival in Barbados. Used vehicles must be inspected by the PQU to ensure freedom from the quarantine risk materials above.

A PQ Officer will inspect all areas of the vehicle. If the vehicle is found to be contaminated, it must be cleaned at the owner agent’s expense to the satisfaction of the PQU. If the vehicle is found to be contaminated with a quarantine pest and the PQU determines that it cannot guarantee freedom from such pest, the vehicle may be exported at the Importer’s expense.
Important points to check include the following:

- wheels, wheel guards, mud guards
- spare tyre and boot
- engine bay—check windshield reservoir and ensure the radiator is clean and free of debris in the cooling fins
- the underside of the vehicle must be clean above and around fuel tank, inside chassis rails and under seats
- The vehicle must be vacuumed to be clean of soil, food, sand and gravel. Special attention must be given to vehicles being imported from tropical rural areas. When inspecting vehicles, the PQ Inspector should make sure they are parked on level ground. Inspectors are required to use a metal or wood probe to check under fenders and not their bare hands. Further, they are to examine for soil and contamination with plant debris and recover any seeds or other pests in the debris. If the vehicle is farm equipment, Inspectors are to carefully examine it for animal contamination, especially for manure.

2.2.4 Trading protocols with other countries

The Barbados Plant Quarantine Unit has a significant history of experience in developing and implementing formal trade protocols on specific agricultural products between Barbados and neighbouring countries. The PQ unit’s specific phytosanitary requirements for allowing certain produce into Barbados are usually developed following visits to the places of production in the exporting country. These are essentially based on the principles of certification of the production of crops in pest free production sites and shipped in a phytosanitary approved pathway from specified places of production to Barbados.

The following outlines the process. The Importer identifies to the PQ Unit what is the desired product to be imported. After a PRA has been done and the risk mitigation measures identified, a trip is either made to the production and export sites where a protocol is developed, which would include the necessary actions to be taken prior to export.

These actions are put in writing (protocol) and this SHALL be made available to the PQ officers. Inter alia, the protocol will outline the following:

- Products to be imported
- Area or origin
- Packaging requirements
- Treatment requirements (washed, chemical, dipped, heat treated)
- Physiology (green only, no leaves)
- Stamps to be used
- Consignee

If conditions in the protocol are not met, the consignment is either destroyed or returned to Exporter.
2.2.5 *Aquatic plants*

Along with the standard requirements for importing live plants the following apply:

- Plants must be imported from a recognized aquatic plant nursery, not wild harvested
- Plants must be free of snails and other aquatic organisms
- Plants must be for aquarium use and must not be introduced into local streams, rivers or other watercourses

2.2.6 *Cotton seed*

- The seed must be treated with methyl bromide
- The seed must only be used for the production of animal feed
- The consignment must be accompanied by the required Phytosanitary Certificate
- Provision must be made to prevent spillage during transport across Barbados
- All unused seed must be destroyed
- The Barbados Plant Quarantine Services must be advised of the dates of shipment in advance to arrange for inspection of the material on arrival

Non-compliance with the above measures will trigger one of the following actions: re-export of the consignment or supervised destruction at the consignee’s expense.
3.1 Export Certification Framework

The purpose of export certification is to ensure that plants, plant products and other regulated articles exported from Barbados are in conformity with the phytosanitary requirements of the relevant importing country and with international norms.

The Phytosanitary Certificate

The basic elements of the Phytosanitary Certification system involve the following:

- Ascertaining the relevant phytosanitary requirements of the importing country (including provision of import permits, if required)
- Verifying that the consignment conforms to the above requirements at the time of certification
- Ensuring traceability of consignments and their certification through all stages of production, handling and transport to the point of export
- Issuing the Phytosanitary Certificate
- Maintaining the integrity and phytosanitary security of certified consignments between certification and exportation
- Maintaining record keeping, document storage and retrieval systems
- Auditing and regular reviewing of the effectiveness of the export certification system
- Implementing procedures for investigating reports from importing countries of non-conforming consignments covered by a Phytosanitary Certificate

The PQ Unit assists Exporters in meeting the plant quarantine import requirements of foreign countries. As part of this service, PQ/PI Unit’s responsibility includes the following:

- Maintaining current information on the Plant Quarantine Import requirements of countries involved in trade of regulated materials with Barbados
- Inspecting domestic plants and plant products offered for export
- Certifying those shipments that meet the import requirements of the foreign country
- Monitoring the issuance of Export Certificates to ensure their accuracy
- When possible, assisting Barbadian exporters if their certified shipments are held at destination, and advising Exporters of shipments that are not certified
• Certifying plants or plant products of foreign origin that have been legally imported into Barbados and are being re-exported
• Monitoring other phytosanitary program activities to ensure the credibility of the Export Certification Program
• Ensuring that only authorized inspectors or certification officials inspect and certify the phytosanitary conditions of plants and plant products offered for export

3.2 Export Certification Options
Countries acceding to the New Revised Text of the IPPC (1997) provide export phytosanitary certification via an inspection process that can start at the place of production and be continued through all the steps of the chain i.e. production, processing, commercialization. This new approach allows for phytosanitary concepts such as “pest free areas”, “places and sites of production and “pest free” or “integrated system approaches”.

3.2.1 End-point Consignment Inspection
Immediately prior to export, plants and/or plant products from each grower’s lot in a consignment are subjected to phytosanitary inspection for compliance to the importing country’s phytosanitary requirements.

3.3 Export of Non-Inspected Plant Products
Where the PQ Unit is informed that produce has been exported from Barbados to a destination for which inspection for compliance with phytosanitary requirements has not been undertaken for that destination, the importing control authorities must be informed. The PQ Unit will make it clear to the importing control authorities that it is unable to give any form of assurance as to the pest status of the consignment in question.

In the event that an importing country’s phytosanitary control authority requests an “Exporting NPPO PQ Unit inspection on arrival in that country” as a means of providing Phytosanitary Certification for the entry of otherwise non-inspected plant products, the Barbados Chief PQ Officer may, after making it clear to the importing country’s authority that Barbados would not enter into a reciprocal arrangement in similar circumstances, approve a PQ Unit inspection being undertaken with the associated cost being charged to the Exporter. Note: Any decision as to what action (e.g. re-ship, inspect/accept, destroy, etc) should be undertaken on arrival, is solely the responsibility of the importing country.
3.4 End Point Export Certification - Operating procedures

3.4.1 Inspector’s Responsibilities

• To determine the import requirements of a foreign country for plants or plant products and then determine whether or not the products meet the requirements.

• The PQ/PI Unit’s Inspector should examine an Import Permit or special authorization, and review the phytosanitary requirements of the country of destination. The Inspector should not issue an Export Certificate for prohibited material unless an Import Permit or special authorization from the plant protection service of the foreign country is presented. When a product is not eligible for certification or fails inspection, the Inspector will provide the Exporter with the reasons and without prejudice, where possible, the available information necessary to meet the importing country’s requirements.

• Inspect the plants and plant products before issuing an Export Certificate to determine that the material meets the requirements of the importing country as well as meeting the export requirements of Barbados for certain products such products protected under CITES, sugar cane planting material, etc.

• Advise Exporters that they must export plants and plant products within prescribed time limits following inspection. Those time limits are usually specified in the information provided by the country of destination. If a time limit is not specified, then the general time limit for certification and exportation is within seven (7) days of inspection.

• Supervise or verify the application of any treatment to prepare the plants or plant products for export.

• Verify that the contents of the shipment are as documented on the Export Certificate. Here, the Inspector should compare the Export Certificate with any supporting documents such as inspection certificates or reports of other agencies that may help to verify the accuracy of the contents of the shipment and the Export Certificate.

• Advise Exporters, Brokers, and other interested parties as to the status of the shipment. When samples are drawn for laboratory examination or when delays in certifying the shipment occurs, the Inspector should inform the Exporter or the shipping company so that the shipment is not inadvertently loaded before the completion of inspection and certification. Once the inspection is completed and the export certificate issued, the Inspector should immediately notify the Exporter or the shipping company that loading can begin.

• Prepare Export Certificates. Some countries will not accept certificates with alterations, errors, or erasures. Unacceptable Export Certificates will result in shipments being rejected, destroyed, or delayed in release. Important: Do
not issue an Export Certificate if the time limit has been exceeded. Use a Bill of Lading to identify if the plants or plant products have been inspected and are being shipped within the established time limit.

- Never make corrections to the areas on the certificate that identify the following:
  - Name and quantity of plants or plant products
  - Botanical name of plants
  - Number and description of packages
  - Distinguishing marks
  - Additional declaration

If permitted by the importing country, the Inspector may correct minor errors in the other areas of the certificate, but these corrections should be initialed by the Inspector. Never delete entire entries or use opaque correction fluid. Certificates must be completed in English and in a legible handwriting or typed.

- Keep a copy of the Export Certificate and attach copies of Import Permits (IP’s) and all other documents used for the certification of each shipment.

3.4.2 Exporter’s (or Shipper’s) Responsibilities

- Apply for the inspection and certification of each shipment to be certified. Certificates can be issued at the point of origin, port of transit, or at the actual port of export. The application must be in the form specified and submitted to the PQU in sufficient time in advance of the shipping or loading dates to provide for sampling and inspecting. The time period for the advance notice will be set by the Plant Quarantine Unit.

- Make the shipment available for inspection. Shipments cannot be inspected onboard aircraft or ships or in the holds of vessels. The plants or plant products must be accessible to the Inspector so that the official can verify and inspect the material described on the application or certificate. In addition, dock papers or other shipping documents should be marked or stamped to prevent the shipment from being loaded before the inspection is conducted. The Exporter is further responsible for providing the labor to open and close packages for inspection and for providing adequate facilities to perform the inspection. Such facilities include equipment, proper lighting and other materials as required for an efficient inspection before certification.

- The Exporter should be provided by the PQU with a list of minimum requirements for all Exporters of fresh fruits and vegetables. Only Exporters who conform to these requirements would be registered. (See Appendices 13 and 14 for a listing of the minimum requirements and Inspectors Checklist for packaging houses)
• Provide for any required treatments, reconfiguring, or other actions to meet the import requirements of the foreign country.

• Export only those plants or plant products that have been properly inspected and certified.

• Safeguard the integrity and phytosanitary status of the certified consignment between the date the shipment was certified and the actual shipping date.

3.5 Methods and Procedures

3.5.1 Application for Export Inspections and Phytosanitary Certificate (PC)

The Exporter or Shipper shall submit an application for inspection and certification to the PQ Unit at a period of time before export as determined by PQU management. If the terms of export require inspecting during the growing season, or laboratory analyses, which may last a considerable period of time, the Exporter shall take this into consideration.

The application form shall be completed as accurately as possible using exact terms, definitions and figures. Basic information includes the following:

1. Location of commodity
2. The identity of the plants or plant products (botanical name), plant parts, level of processing
3. Whether or not it is a processed product and the degree of processing
4. Where it was grown (geographical location)
5. Where it is going (country and port(s) of entry)
6. The expected date on which the plants or plant products will be shipped

The application should indicate if the certification is required for the following:

3.5.1.1 Domestic Products
Domestic products are those plants and unprocessed or un-manufactured plant products grown or produced in Barbados.

3.5.1.2 Foreign Products
Foreign products are plants and plant products that have officially entered Barbados but were grown or produced in countries other than Barbados. Foreign products may be eligible for an Export Phytosanitary Certificate or may be certified for re-export.

Products processed to a level that will prevent them from being infested or contaminated by plant pests, as well as prohibited or in transit products, are not eligible for export or re-export certification.
3.5.1.3 *Processed Products*
Processed products are plant products processed or manufactured to the degree that they are unlikely to harbor regulated pests (Commodity Class 1). Processed products are not eligible for certification even when the importing country specifically requires a Phytosanitary Certificate.

3.5.1.4 *Prohibited and Restricted Products*
Plants and unprocessed or un-manufactured plant products listed as being prohibited for entry to the importing country are ineligible for Phytosanitary Certification, unless an Import Permit or other special authorization is provided from the plant protection service of the importing country.

3.5.1.5 *Transiting Foreign Products*
Foreign products that are transiting Barbados under Customs bond are not eligible for re-export certification.

3.5.1.6 *Additional supporting information*
Jointly with the application, the Exporter/shipper shall provide all the relevant supporting documents available, e.g., Import Permit (IP), other inspection certificate, or other agency inspection forms. If no information about the phytosanitary requirements of the importing country is provided, it can be requested from the IPPC focal point of the country of destination.

3.6 *General Inspection Procedures for Exports*
The inspection and verification of plants or plant products offered for export determines whether or not the shipment meets the import requirements of the foreign country. Inspectors should review Import Permits (IP’s) or special authorizations that were submitted by the Importer to ensure that the shipment meets any additional requirements listed in the documents.

Arrangements for inspections must be coordinated with the appropriate shipping officials to determine the availability of the plants or plant products for inspection, their location, and the loading times. Inspections should not begin until the plants or plant products are assembled together, clearly marked, and labeled.

The following are the activities involved in the general inspection process:
1. Determine if the Exporter has an acceptable Inspection Certificate
2. Determine if a laboratory examination is required
3. Check the shipping date
4. Decide what sample size to inspect
5. Compare the shipment with supporting documents
6. Inspect the product
7. Obtain the identity of a pest
8. Determine if the plant pest is a regulated pest
9. Look for unauthorized packing material
10. Record the results of the inspection on the PQ form
11. Issue or deny issue of the Export Certificate

3.7 **Decide What Sample Size to Inspect**

When conducting a visual inspection, it must be decided if to inspect the entire shipment or a scientifically drawn sample. This decision may be based on the following factors:

- Import requirements of the importing country
- Directions provided by the supervisor
- Existing guidelines such as in the FAO ISPM guidelines or other manuals
- Knowledge of pest conditions and pest distribution where the plants or plant products were grown and produced
- Size of shipment
- Type of plant or plant product.

When sampling is the basis for certification, officially drawn samples must be large enough to represent the entire lot and must be such that it can accurately reflect the conditions of the entire shipment. The minimum inspection level for fruit and vegetables is two (2) percent of the shipment’s inspection unit (i.e., boxes, units, bags, tray packs, etc.). The inspection level for plant material (nursery stock) and other high-risk material should be 100 percent or as close to 100 percent as is practical. Commodities shipped in bulk (grain or potatoes) will require sampling techniques appropriate to the levels of pest risk and industry standards, which may be less than two (2) percent.

Use ISPM 31, “Methodologies for Sampling of Consignments”, as a guide for the sampling methodologies to be used.

3.8 **Record Inspection Results**

Inspectors must record the results of their inspection and additional information about the shipment on the standard form (see Appendix 4). This will support their decision to certify or not certify the plants or plant products. Inspectors must record the following information about the inspection:

- Place (port and location) where the plants or plant products were inspected
- Percentage of material inspected
- Percentage of material infested or infected
- Pests intercepted and treatments given
- Actions taken by the Exporter (as a result of inspection)
- Actions taken to make the plants or plant products eligible for certification such as repackaging, reconfiguring, or debarking
- Unusual situations concerning the shipment
- Inspector’s signature
- Date and time of the inspection (ensure that the inspection was conducted within specified time limits)

3.9 Prepare the Phytosanitary Certificate

This is done after recording the inspection results and deciding that the shipment is in conformance with the Importers’ conditions. The Inspector can then prepare and issue a Plant Export Certificate.

3.10 The Phytosanitary Certificate

3.10.1 Purpose of the Phytosanitary Certificate (PC)

The purpose of the PC is to indicate that the consignments of plants, plant products and other regulated articles meet the specified phytosanitary requirements of the importing country and are in conformity with the certifying statement of the appropriate model certificate. It is an official document issued by the exporting country’s plant protection authority to the importing countries plant protection authority. The PC is based on the IPPC Model Phytosanitary Certificate (see Appendix 8 and ISPM 12).

3.10.2 Accountability

An accountability system must be established to deter forgeries and to ensure there is no misuse of Plant Export Certificates.

3.10.3 Certification Violations

Only officials authorized by PQ/PI Unit can change or correct information on Plant Export Certificates. Unauthorized changes are in violation and may be prosecuted under the Regulations of the Barbados Plant Protection Act. When a violation is discovered, the PQU management should investigate and take the necessary corrective action.

3.10.4 General Guidelines for Completing Plant Export Certificates

3.10.4.1 Attachments

Official attachments to the Phytosanitary Certificate should be limited to those instances where the information required to complete the certificate exceeds the available space on the certificate.
Any attachment containing phytosanitary information should bear the Phytosanitary Certificate number, and should be dated, signed and stamped in the same manner as the Phytosanitary Certificate. The PC shall indicate, in the appropriate section, that the information belonging in that section is contained in the attachment. The attachment should not contain any information that would not be put on the Phytosanitary Certificate itself, had there been enough space.

When there is insufficient space on a PC, then the following actions should be taken:

- In the appropriate part of the certificate, ENTER "See attachment"
- List the information on a separate sheet of plain paper without a letterhead, unless required by the importing country
- Indicate the number of the PC and the date of issuance at the top of each continuation sheet
- Review the listed information for accuracy
- Record an additional declaration on the PC that refers to the attached sheets
- Sign each continuation sheet
- Include the original continuation sheet(s) with the original PC
- Include a copy of the continuation sheet(s) with each copy of the certificate

3.10.4.2 Corrections

Corrections are either not allowed or should be kept to a minimum.

- Do not allow errors on PCs as the export summary specifically states that the certificate may contain no errors
- Never correct information entered in the critical blocks on the PCs, unless directed otherwise in the export summary
- Never delete entire entries or use opaque correction fluid or correction tape

3.10.4.3 Critical Lines

Corrections and errors are not allowed in the following critical lines on the Phytosanitary Certificate:

- Name of Produce and Quantity declared
- Botanical Name of plants
- Number and Description of packages
- Distinguishing marks
- Additional Declaration
- Product (kind, quantity, and weight)
- Identification
3.10.4.4 *Format*

The format of the international model adopted by the International Plant Protection Convention must be followed.

3.10.4.5 *Language and Legibility*

PCs must be completed as follows:

- English language only
- Original and all copies should be legible
- No foreign words or phrases, except for Latin binomial names of plants, plant products and plant pests or plant diseases
- Hand printed in uppercase letters, typed, or computer generated

3.10.4.6 *Replace Lost Phytosanitary Certificates*

Only Plant Quarantine Inspectors at the issuing office can either replace or re-issue lost PCs. Replacement certificates are based on the same inspection date(s) and results of the original certificates because replacements are not based on new inspections. Only the date of issuance will change on replacement certificates. Record an additional declaration on replacement certificates that includes replaced certificate number, date of issuance, issuing office, and the reason for replacing the certificates (see example below). There is usually a user fee charged for replacements in most countries.

3.10.5 *Specific Principles and Guidelines for Preparation and Issue of Phytosanitary Certificates*

Phytosanitary Certificates and Phytosanitary Certificates for re-export shall include only information related to phytosanitary matters.

Inspectors must never enter or authenticate an additional declaration on a PC that refers to the following:

- Aflatoxins or other mycotoxins
- Fitness for human consumption
- For bulk shipments of grain, freedom from plant disease-causing organisms when a pathogen occurs in Barbados
- Freedom from animal diseases and statements about animal health concerns
- Grade and/or quality
- Genetic composition and/or disease resistance
- Intended use (such as for scientific purposes)
- Letter of credit number
- Letter of credit requirements or other unofficial requests from buyers and sellers
- Levels of radioactivity, nuclear radiation, or radionuclides associated with a commodity
- Pesticides or other chemical residues
- Purchase contract number
- References to artificially propagated or wild collected plants
- Any other requested statement that is not of a phytosanitary nature such as economic permits, quantity or quality restrictions, or methods of packaging

To facilitate cross-referencing between the PC and documents not related to phytosanitary certification (e.g. letters of credit, bills of lading, CITES certificates), a note may be attached to the PC which associates the PC with the identification code, symbol or number(s) of the relevant documents which require cross-referencing. Such a note shall only be attached when necessary and shall be not considered an official part of the Phytosanitary Certificate.

All the blocks in Phytosanitary Certificates and Re-export Phytosanitary Certificates shall normally be completed. Where a no entry is made, the term “None” shall be entered or the line shall be blocked out (to prevent falsification).
4.1 Overview – Framework

Inspection, as defined in ISPM 5, is the ‘Official visual examination of plants, plant products or other regulated articles to determine if pests are present or to determine compliance with the phytosanitary regulations’. Inspections should be performed based on data collected on consignments in accordance with the relevant ISPM’s.

This section of the manual highlights aspects of the inspection process which are common to both the Importation and Exportation regulatory functions of the Plant Quarantine Unit.

It, therefore, seeks to provide guidance in such areas as Sampling of Cargo, How to examine the various commodity classes, Pest Interceptions, the Inspection of Vessels including the various types of vessels that might be involved in the pathways of regulated articles entering or leaving Barbados, the Inspection of Aircraft, Garbage inspection and disposal, Inspection of Sea and Airport facilities, Postal Inspection, Post Entry Quarantines, Documentation or Certification systems and Public awareness and cooperation in Plant Quarantines.

4.2 Operations

4.2.1 Sampling of cargo

It is important that Barbados’ sampling procedures are documented and transparent, and take into account the principle of minimum impact (ISPM 1: Phytosanitary principles for the protection of plants and the application of phytosanitary measures in international trade).

It is usually not feasible to inspect entire consignments, so phytosanitary inspection is normally performed on samples obtained from a consignment. Inspection and/or testing using statistically based sampling methods can provide a level of confidence that the incidence of a pest is below a certain level, but it does not prove that a pest is truly absent from a consignment.

ISPM 31 outlines methodologies for sampling consignments.

4.2.1.1 Objectives of sampling consignments

The sampling of consignments is carried out for the following reasons:

- detect regulated pests
- provide assurance that the number of regulated pests or infested units in a consignment does not exceed the specified tolerance level for the pest
- provide assurance of the general phytosanitary condition of a consignment
- detect organisms for which a phytosanitary risk has not yet been determined
• optimize the probability of detecting specific regulated pests
• maximize the use of available sampling resources
• gather other information such as for monitoring of a pathway
• verify compliance with phytosanitary requirements
• determine the proportion of the consignment infested

A lot to be sampled should be a number of units of a single commodity identifiable by its homogeneity in factors such as the following:

• origin
• grower
• packing facility
• species, variety, or degree of maturity
• exporter
• area of production
• regulated pests and their characteristics
• treatment at origin
• type of processing

A consignment may consist of one or more lots. If there are more than one lot, the Inspector should do the following:

• Conduct several visual examinations to determine compliance
• Sample each lot separately
• Segregate and identify the samples relating to each lot so that the appropriate lot can be clearly identified if subsequent inspection or testing reveals non-compliance with phytosanitary requirements

Sampling first involves the identification of the appropriate unit for sampling (for example, a fruit, stem, bunch, unit of weight, bag or carton). The determination of the sample unit is affected by issues related to the following:

• homogeneity in the distribution of pests through the commodity
• whether the pests are sedentary or mobile
• how the consignment is packaged
• intended use, and
• other operational considerations

Sample units should be consistently defined and independent from each other.

The sample size is the number of units selected from the lot or consignment to be inspected or tested. Guidance on determining the sample size is provided in ISPM 31 Section 5.
NPPOs may choose either a statistically based or non-statistical sampling methodology. Sampling based on statistical or targeted methods is designed to facilitate the detection of regulated pest(s) in a consignment and/or lot. ISPM 31 gives full details regarding sampling methodologies.

Sampling containerized cargo may pose an operational problem because the Quarantine Officer may need to obtain a representative sample of the entire container. Usually, only the rear of the container is available to the inspector and, unless samples can be secured from the middle or front of the container, the sampling would not be truly representative of the consignment. Under these circumstances, it may be preferable to inspect the container at the Importer’s premises or at a container warehouse. Sampling is usually done without replacement of samples prior to completion of inspection.

### 4.2.2 Procedures related to Plant Commodity Classes

The commercial commodities that are most frequently inspected are Fruit and Vegetables, Wooden furniture and furnishings, live Plants and planting material, and Grains. The specific procedures for consignment inspection are related to the risks associated with their plant commodity class as specified in the Table below.

**Table 4: Plant Commodity Classes**

<table>
<thead>
<tr>
<th>INTENDED USE / REPRODUCTION</th>
<th>CLASS</th>
<th>COMMODITY CLASS DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROPAGATION / REPRODUCTION</td>
<td>CLASS 1</td>
<td>Plants for planting, except subterranean parts and seeds.</td>
</tr>
<tr>
<td></td>
<td>CLASS 2</td>
<td>Bulbs, tubers and roots: subterranean parts intended for propagation.</td>
</tr>
<tr>
<td></td>
<td>CLASS 3</td>
<td>Seeds: true seeds in their botanical definition intended for propagation.</td>
</tr>
</tbody>
</table>

- **CONSUMPTION / TRANFORMATION**
  - CLASS 4 | Fruits and vegetables: fresh parts of plants intended for consumption or processing and not for planting. |
  - CLASS 5 | Ornamental cut flowers and foliage: cut portions of plants, including the inflorescences, intended for decoration and not for planting. |
  - CLASS 6 | Wood, bark, cork: processed, semi-processed or not processed. |
  - CLASS 7 | Include packing and support material and similar products of plant origin and any other material used to transport, protect and/or adapt regulated articles |
  - CLASS 8 | Soil, peat, and other such material of support. |
  - CLASS 9 | Grains: refer to cereals, oleaginous, leguminous seeds and other seeds intended to be consumed and not for planting. |
  - CLASS 10 | Any other regulated article that it is not included in the previous classes. |
4.2.3 **Inspection of consignments**

Below is a list of the basic tools and environment necessary for visual inspections:

- Knife and brush
- Sample bags/phials
- Hand lens
- Proper lighting
- Labels
- A copy of the local pest list
- Pest alert sheets
- Alcohol
- Digital camera
- A list and simple identification keys of target pests of quarantine importance

Specific guidance for the various commodity classes are presented below:

4.2.3.1 **Solid wood packaging material (SWPM) (Class 7)**

Because solid wood packaging material, both soft wood (conifers) and hard wood (broad leaf trees), may transmit pests and diseases, the wood used for packages must comply with phytosanitary requirements.

- SWPM shall be debarked and free from living insects and without grub holes with diameter larger than 3 mm.
- Packing material shall be marked by a special label, as per ISPM No 15 which indicates that the wood has been:
  - heat treated to reach at least 56 degree Celsius in the core of the wood for 30 minutes, or
  - kiln dried if temperature and time are those defined for heat treatment, or
  - fumigated with methyl bromide
- SWPM will be inspected in accordance with methods for round wood and sawn wood.

4.2.3.2 **Packing and support material, Soils and Peat, and others support materials**

The Inspector shall examine the nature of the packaging material used.

- The Inspector shall not allow packaging material of plant origin such as husk and straw. Re-packing shall be required if such materials are found.
- The Inspector shall inspect packaging material for freedom from infestation
by regulated pests, soil and other contamination.

- When the Inspector detects a regulated pest infestation, he/she shall report the situation and require Pest Identification and/or application of appropriate phytosanitary measures, including treatment, or the rejection of the consignment.

4.2.3.3 Inspection of consignments for consumption (Commodity Classes 4, 5, 6 and 9)

4.2.3.3.1 Fresh Fruit and Vegetables (Class 4)

- Visual inspection of samples for signs and symptoms of disease (rots, spots, blemishes), insects, extraneous plant material (weed seeds) and soil contamination.

- The surfaces of the samples should be closely examined for both live and dead organisms. Where organisms are found, they should be collected in sample bags or phials, properly labeled and forwarded to the subject matter specialist for identification. Slice fruit where possible and inspect for internal feeders.

- If the Inspector finds a pest infestation that cannot be identified visually, or the IP requires laboratory tests, he/she shall detain the consignment.

- If the Inspector identifies a quarantine pest that presents the risk of spreading during the detention period, he/she may decide on the rejection, destruction or any other phytosanitary measure required without waiting for the laboratory results. However, a sample shall be referred to the laboratories for purposes of confirmation.

- All imported consignments are inspected. Each plant species and variety is inspected separately.

- The Inspector shall pay special attention to possible soil or debris in the bottom of cases and on packaging material.

- Carefully inspect leaves or stems which may be infested by insects or diseases.

- The sample must be representative of the whole consignment.

- Select numbers of samples for inspection as per Table 5.

**Table 5: Sampling for fresh fruit consignments**

<table>
<thead>
<tr>
<th>Number of units (cases etc)</th>
<th>Number of units to be sampled for inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td>All units</td>
</tr>
<tr>
<td>11 – 100</td>
<td>10 % or at least 5</td>
</tr>
<tr>
<td>101-1000</td>
<td>2% or at least 10</td>
</tr>
<tr>
<td>More than 1000</td>
<td>1 % or at least 20</td>
</tr>
</tbody>
</table>
4.2.3.3.2 White Potatoes (Class 4)

- All consignments of potatoes intended for importation shall be inspected.
- Each lot should be inspected separately. If potatoes are packed, the sacks (usually 20-25 kg for ware potatoes and 50 kg for seed potatoes) are used as units for inspection. If the potatoes are in bulk, it may be impossible to identify individual lots, and the whole consignment should be considered as one lot.
- Special attention shall be paid to possible soil and debris inside and between sacks and in containers.
- Sampled tubers shall be cut in slices by knife, starting from heel end, to verify possible visual symptoms of bacterial diseases (Clavibacter sp. or Ralstonia sp.) or fungus diseases (Fusarium sp.). For visual inspection at least 200 tubers of each lot shall be cut.
- If symptoms of infestation are found, or the inspector suspects infestation but cannot verify it by visual inspection, samples shall be taken and referred to the laboratory. For laboratory tests, the heel ends of at least 200 tubers of each lot have to be cut.
- Samples of loose soil found in sacks or under the inspection table shall be also taken and sent to the laboratory for potato nematode analyses.

Sampling of potato consignments

The numbers in Table 6 are used for random inspection. If the inspector finds any sign of suspected infestation, inspection shall be targeted and more samples shall be taken. (One lot = same variety, same origin = one phytosanitary certificate).

4.2.3.3 Cut flowers (Commodity Class 5)

Check the boxes to determine if the cuttings have been chemically treated. If so, use gloves when handling cuttings. Prepare the stems or bunches of flowers for inspection. The procedure will be different for single stems than for those packed in bunches. Usually single stems are at a lower risk than cuttings tied in bunches for possible diseases and pests.

Table 6: Sampling size for Ware and industrial potato consignments

<table>
<thead>
<tr>
<th>Size of consignment</th>
<th>Number of bags (20 kg)</th>
<th>Size of sample to be inspected</th>
</tr>
</thead>
<tbody>
<tr>
<td>One container or wagon</td>
<td>If 1 lot - inspect 5 bags</td>
<td>In total 200 tubers, collected from inspected bags</td>
</tr>
<tr>
<td>Less than 30 tons and consists of more than 1 lot</td>
<td>If 2-5 lots - 1 bag/lot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If &gt; 5 lots - &lt; bag/lot</td>
<td></td>
</tr>
<tr>
<td>30 - 50 tn</td>
<td>5 bags per lot</td>
<td>In total 200 tubers, collected from each inspected bag</td>
</tr>
<tr>
<td>50 - 200 tn</td>
<td>1 bag per each 10 tons</td>
<td>In total 200 tubers, collected from each inspected bag</td>
</tr>
<tr>
<td>Over 200 tn</td>
<td>1 bag per each 10 tons</td>
<td>1 tuber per tn</td>
</tr>
</tbody>
</table>
All imported consignments of cut flowers shall be inspected regardless of the country of origin.

Inspection shall pay attention to living insects, mites in leaves, any signs of rust or mold or symptoms of bacterial or virus diseases.

Usually plants that are packed as loose stems are of a lower risk than those in a bunch.

The Inspector shall shake or tap each flower or bunch over a white inspection surface. The tapping is to be done with enough force to dislodge any insect larvae, adult insects, or faecal material.

Examine the inspection surface to catch thrips, aphids, and early larval instars. Look for anything that moves and for faecal material that may have been dislodged.

Inspectors must examine the leaves (especially the undersurfaces) and stems for the following:

- Signs of feeding - discoloured mines in the leaves
- Symptoms of diseases - discoloured sections, rust, or black spots
- Adult insects or larvae

The flowers and foliage are to be examined in the following ways:

- Spreading apart inflorescences
- Opening the calyx at the base of the flower
- Cutting open stems
- Inspecting the inside of the packages for larvae, insects, or any other evidence of these pests
- Inspecting lots on the basis of plant species. For flowers packed in boxes or trays, select as many packages that are necessary to comply with the following guidelines:

### Table 7: Cut flowers sampling

<table>
<thead>
<tr>
<th>Number of cut flowers in commodity, packed</th>
<th>Number of plants to be inspected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 100</td>
<td>Inspect all</td>
</tr>
<tr>
<td>101 – 500</td>
<td>15 %, at least 30</td>
</tr>
<tr>
<td>500 – 2000</td>
<td>10 %, at least 70</td>
</tr>
<tr>
<td>More than 2000</td>
<td>5 %, at least 150</td>
</tr>
</tbody>
</table>

4.3 Inspection of Non-Perishable consignments: (Classes 5, 6 and 9), (e.g. grain, pulses, spices, dry fruits, nuts, dry plant material, wooden artifacts, etc.)
4.3.1 Stored products (grain, flours etc) (Class 9)

Stored products may be infested by insects, mites or moulds. If the product is imported loose, the samples are most easily and reliably taken when the cargo is unloaded. Sampling is done by collecting enough material in cans of approximately 0.5 litres each. Cans are filled at different times during unloading, then combined as a bulk sample and inspected visually. When the product is transported as bulk cargo, living insects and mites are usually found on the top layer and corners of the material. If possible, samples should be taken from these places before unloading. The inspection of small packages will entail destruction of the packaging of the samples.

4.3.1.1 Inspection procedure

From each store and silo, two (2) samples are taken, one from top and one from the bottom. One sample shall consist of 10 sub samples taken from different parts of the stored grain. One sample should be about 1 litre. Samples are inspected in the laboratory by binocular microscope. The species of insects found are determined and the numbers of insect and mites per litre are estimated. Stored products may be imported in bulk or packed into sacks or into different types of packages. It is essential to get a representative sample of the whole lot for visual inspection.

If imported in bulk the whole consignment should be divided into parts which have an equal possibility of being sampled. Usually this can be done only when the consignment is unloaded either at the harbour or at the place of destination. If imported in bags, each bag may be regarded as a unit for sampling. See Tables 8 and 9 below.

Table 8: Sampling size for cereals in bags

<table>
<thead>
<tr>
<th>Number of bags in consignment</th>
<th>Number of bags to be sampled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td>All bags</td>
</tr>
<tr>
<td>11 – 100</td>
<td>10 bags selected at random</td>
</tr>
<tr>
<td>More than 100</td>
<td>5%, at least 10 bags</td>
</tr>
</tbody>
</table>

Table 9: Sampling size for bulk cereal

<table>
<thead>
<tr>
<th>Quantity in lot, tons</th>
<th>Number of sub-samples and total quantity of material in bulk sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10 ton</td>
<td>5 sub samples, 1 litre</td>
</tr>
<tr>
<td>11-50 ton</td>
<td>8 sub samples, 1,5 litre</td>
</tr>
<tr>
<td>51 - 100 ton</td>
<td>10 sub samples, 5 litre</td>
</tr>
<tr>
<td>More than 100 ton</td>
<td>15 sub samples, 10 litre</td>
</tr>
</tbody>
</table>
4.3.1.2 **Round wood and sawn wood (Class 6)**

With wood inspection, quantities are large and the unloading of consignments for inspections at the time of import may be difficult. Note below the most important steps of inspection:

- verify the origin of wood indicated in the documents because risk depends on origin
- check that the wood species are those listed in the documents
- pay attention to bark; loose bark means usually bark beetles
- find and sample living insects
- take notice of holes, traces and tunnels of insects in wood surface under bark, frass (sawdust under bark), grub-holes wider than 3 mm
- try to find blue stained wood, which indicates the presence of fungus suitable for feed by wood living nematodes
- if the wood is kiln-dried, measure the humidity percentage of the wood

Sawn wood is classified according to international quality grading systems, and the quality is marked on the wood itself or in the packages. Grading category helps in determining the phytosanitary status of each lot.

4.3.1.2.1 **Inspection procedure**

- Each lot in a consignment shall be inspected visually. If sawn wood is packed in a plastic cover, the Inspector shall require a certain number of packages to be opened.
- If round wood is loaded into ships, railway wagons or into lorries, the inspector shall visually inspect generally the whole train or lorry.
- If all wagons seem to be loaded by same type of wood (same quality category), select 10% of the wagons for targeted inspection. Targeted inspection is directed into logs which are visible in wagons. Round wood loaded into lorries shall be inspected wholly by the same principles.
- Where the Inspector suspects that logs in the middle of the cargo are under different conditions from those which can be seen on outer surface, the cargo should be unloaded in a place where inspection can be conveniently carried out.
- The Inspector shall pay attention to the wood used to support the cargo and dunnage, which may be of low quality. They may also be of tree species different from that of the main consignment. Hard wood cargos may be supported by coniferous wood or vice versa.

The relative humidity inside wood is a reliable method to verify if the material has been adequately kiln dried. If humidity is lower than 20% RH, kiln drying has been used. Heat treatment (56 degrees for 30 minutes) does not necessar-
ily decrease the RH under 20%. Therefore, whether heat treatment has been performed in a proper way or not cannot be reliably tested by physical measurements in such wood.

4.3.1.2.2 Samples for pinewood nematode analyses
Coniferous round wood and sawn wood or packing wood originating in countries where pinewood nematode exists, may be inspected by the following methods: select blue-stained parts in wood, samples may be taken by drill with a 25 mm diameter bit, a 20-30 mm deep hole is drilled on the outer surface of the wood, the drill chips are collected in a plastic bag, marked, closed and sent to the laboratory. One bulk sample shall be at least 200 g of chips, drilled from at least 20 logs or boards. Samples shall not be taken at the end of logs. If a drill is not available, discs may be taken by saw.

4.3.1.3 Small plants and cuttings of ornamentals and vegetable plants (Class 1)
Each species or variety is inspected separately. Small consignments (less than 100 pcs.) shall be inspected in total. On the larger consignments, at least 10% shall be selected at random with a minimum of at least 100 pcs. Sample size should be in accordance with Table 8.

Table 10: Sample size for small plants and cuttings

<table>
<thead>
<tr>
<th>Number of plants or cuttings in lot</th>
<th>Number of plants to be inspected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 500</td>
<td>Inspect all</td>
</tr>
<tr>
<td>501-2000</td>
<td>15 %, at least 150</td>
</tr>
<tr>
<td>2001-10000</td>
<td>8%, at least 300</td>
</tr>
<tr>
<td>Over 10000</td>
<td>5%, at least 500</td>
</tr>
</tbody>
</table>

Inspectors shall look for thrips, leaf miners and whiteflies. Any sign of discoloration may indicate the presence of a virus or bacterial disease. In these cases, samples shall be taken for laboratory analyses. If infestation is suspected but cannot be proven, small plants and cuttings may be ordered into post entry quarantine for cultivation.

4.3.2 Root crops, edible bulbs (onions etc), flower bulbs, corms and roots (Class 2)
- Inspect the root crop or bulb for signs of insect boring.
- If holes are visible, cut the root or bulb with a knife and verify the reason.
- To detect nematodes, look for surface discoloration (generally a brownish–grayish color), surface blisters, depressions, or any irregularity.
- To inspect for nematodes, take samples to the laboratory.
• Take sample of soil attached to root crops and bulbs and of loose soil in the bags and containers. Soil may be infested by nematodes.
• Maximum allowed amount of soil is 1 % of weight.
• If indications of disease are noticed, detailed examination using a microscope must be carried out.
• When necessary, or if required in the IP, special laboratory tests will be conducted to meet requirements of additional declarations.

The data in Table 11 should be used in selecting samples for visual inspection.

**Table 11: Sample sizes for bulk Class 1, 2 or 3 materials**

<table>
<thead>
<tr>
<th>Quantity in lot, tons</th>
<th>Number of sub-samples and total quantity of material in bulk sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10 ton</td>
<td>5 sub samples, 1 litre</td>
</tr>
<tr>
<td>11-50 ton</td>
<td>8 sub samples, 1.5 litre</td>
</tr>
<tr>
<td>51 - 100 ton</td>
<td>10 sub samples, 5 litre</td>
</tr>
<tr>
<td>More than 100 ton</td>
<td>15 sub samples, 10 litre</td>
</tr>
</tbody>
</table>

**Table 12: Sample sizes for smaller quantities**

<table>
<thead>
<tr>
<th>Quantity in a lot, kg</th>
<th>Amount of sample, kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10 kg</td>
<td>Inspect all</td>
</tr>
<tr>
<td>11-100 kg</td>
<td>Inspect at least 10%, but at least 100 pcs.</td>
</tr>
<tr>
<td>Over 101 kg</td>
<td>Inspect at least 5 %, but at least 200 pcs.</td>
</tr>
</tbody>
</table>

4.3.3 **Nursery products (fruit trees, small plants, ornamental trees, perennials) (Class 2)**

Nursery products must be bare rooted, free of soil or any growing medium. Fresh peat moss for protecting the root system is allowed, but all the attached soil or growing medium must be removed.
• Inspect all of small consignments. On larger consignments select at random 10% of plants for inspections, at least 50 pcs.
• Open soil or peat balls and inspect the roots, which may be infested by nematodes or bacteria (knots, malformations).

See Table 13 below for sample sizes.
During the visual inspection, pay attention to the following:

- root knots, discolored stems, dark spots, loose bark in stems. Problems with nursery plants are virus and bacterial diseases, which are difficult to observe and identify, and which may appear only after some years’ cultivation. Laboratory test should be required.
- The Inspector shall pay attention to plant species which are known host plants of quarantine pests.
- Attention shall be given to the growing medium in pots, which should be clean growing peat without organic soil. No soil is to be permitted on any plants; roots should be protected by non-soil medium.

### 4.3.4 Non-perishables (e.g. true seed) (Class 3)

The Inspector shall carry out sampling in accordance with principles established earlier.

- The consignment will be examined visually for insects, mites, disease symptoms, galls, fungal fructification, weed plants, in relation with regulated pests (quarantine and non-quarantine regulated pest), soil contamination, etc.
- Samples shall be forwarded to the laboratory for further examinations including:
  - Microscopic examination for spores, mites, etc.
  - Blotter/incubation tests for detecting seed borne infection
  - Other laboratory tests as required

### 4.3.5 Inspection of Special Class 10 Commodities (Bio-control agents as parasites, predators, bacteria, fungi, viruses, herbaria, soil, etc.)

These are special cases, and it is expected that the conditions under which these would be allowed entry or certified for export would have been detailed by the subject matter specialists in the Plant Protection Unit and the PQ Unit management and included in the Import Permit or other relevant official document. Detailed instructions for inspection, detention and release of these regulated articles must be provided to relevant staff by PQU management.

---

**Table 13: Sample sizes for nursery products**

<table>
<thead>
<tr>
<th>Number of plants in a lot</th>
<th>Number of plants to be inspected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 50</td>
<td>Inspect all</td>
</tr>
<tr>
<td>51-200</td>
<td>10%, at least 15</td>
</tr>
<tr>
<td>201-500</td>
<td>5%, at least 20</td>
</tr>
<tr>
<td>Over 500</td>
<td>3%, at least 30</td>
</tr>
</tbody>
</table>
Otherwise unregulated articles that are considered as possible pathways for entry of pests must be free of soil, hay, grass cuttings, etc. Such contaminants may present serious implications for the country. For example, soil is an excellent carrier of human, animal and plant disease. Examples are as follows:

- Cholera (human)
- Foot and Mouth Disease (animal)
- Nematodes and soil borne pathogens (plants)

Christmas Trees that are imported seasonally at Christmas time are special cases that constitute a risk of entry of exotic quarantine pests, as well as possibly dangerous insects, mites and other unwanted animals. In general the phytosanitary measures that are recommended for importation of these trees into Barbados are as follows:

- The trees must be imported under import permits.
- The IP should indicate that trees must be sourced from farms specialized in the sale of such trees.
- Trees should be well shaken to dislodge insects and other unwanted pests before being placed in containers.
- Because of their use inside homes, the trees should not normally be treated with insecticides.

4.3.6 Pest Interceptions

Should any regulated pest be intercepted or any prohibited or restricted plant products be found, the following quarantine actions may be taken.

4.3.6.1 Interception of any prohibited plant or plant product

If a plant or plant product is discovered and is known to be a host of pest(s) of major phytosanitary concern to Barbados or to the importing country (in the case of exports) the Inspector shall do the following:

- **Seal** the concerned store and appropriately place a tag with a warning quarantine notice prohibiting tampering with the seal. All fruit fly host materials should be sealed in vessel stores or refrigerators.
- **Inform** the Ship’s Officer that products under seal are subject to quarantine while in the country and that the seal can only be broken under plant quarantine supervision or after the vessel’s departure from the territorial waters of the country.
- **Ensure** that both the Quarantine Officer and the Ship’s Officer sign the appropriate form indicating the action taken.

If restricted or prohibited plants or plant products are encountered, but it is determined that there is little or no risk of the introduction of any pests of quarantine significance provided that these products remain aboard the ship, then it would suffice to safeguard these plants or products, that is, they may be allowed
to remain aboard ship. The removal of prohibited products or waste generated from their use should not be allowed. The Inspector should do the following:

- Collect all plant pests intercepted and identify them where possible.
- Refer to relevant specialists, using the appropriate pest interception form, all organisms believed to be of phytosanitary significance that could not be properly identified immediately by the inspector.
- Prepare and preserve specimens of pests for their final determination and possible incorporation in any local collections.
- Keep adequate records of interceptions and subsequent actions in order to establish appropriate references for future actions.

In all cases of non-compliance, the ship officials must be informed of the action taken and warned accordingly.

All fruits, vegetables or other plant products found aboard that present a low or an acceptable level of phytosanitary risk may be allowed or released without restriction.

Whenever boarding and inspection takes place, the Inspector and the PQU must keep proper records.

### 4.4 Inspection of Vessels

#### 4.4.1 Objectives

All ships arriving into Barbados should be inspected, regardless of the nature of the cargo. However, those that bring products of plant origin should have highest priority. It must be kept in mind that residual pest infestations can and have occurred from residues of previous cargoes including plant products. Also, there have been many examples of packing materials of non-plant products that were found infested with insect pests. These materials may pose substantial risks and must be inspected even though the current cargo may be of a non-plant nature.

The main objectives of ship boarding and inspection are as follows:

- To determine if there is on board any cargo, stores, crew and/or passenger baggage, garbage, etc. (which might be subject to restrictions and prohibitions as set forth in the plant quarantine regulations) or other materials which may be infested or infected with regulated pests.
- To determine if there are any contaminating pests (hitchhikers) of potential plant quarantine importance that could be introduced into the country while the ship is in port.

#### 4.4.2 Inspection procedures for vessels

Inspection procedures will depend on the type of vessel and the characteristics of the cargo. Bulk cargo, for example, will require different procedures from those for containerized cargo.
4.4.3 **Vessel boarding**

Ships may be inspected at the wharf or dock. This should be done as soon as possible after docking. A boarding party is organized, which would normally include such agencies as Customs, Health and Plant Quarantine.

It is important that the Customs and the Plant Quarantine Services work together as they both require similar information of the ship’s officers. The Customs Officer may be authorized to perform some of the duties of plant quarantine on first boarding if a plant quarantine officer is unavailable.

4.4.4 **Inspection on arrival**

Where required, the plant quarantine inspector asks the Captain of the vessel for the phytosanitary certificates that cover the products to be unloaded. The Inspector ensures that the phytosanitary certificates agree with the declared cargo according to the shipping documents. Some intraregional trade concerns will include the following:

- soil accompanying root crops (produce with excessive soil may be washed on the wharf or any other area deemed safe to do so)
- fruit flies on fruit from certain areas
- sweet potato weevils
- mango seed weevil (*Sternochetus mangiferae*)
- pink hibiscus and other mealy bugs (if deemed to be quarantine pests)
- packing materials including banana leaves that can be a pathway for pests such as Black Sigatoka

The Inspector should be mindful of the following regarding intraregional trade:

- Bilateral or regional protocols based on integrated or other measures should be honoured.
- A pest that is widely spread in Barbados and not under official control should not be regulated against re-entry from another country.
- Produce from different islands may sometimes be combined before shipment to Barbados. This is especially important for some products such as citrus leaves and fruit, mangoes and sweet potatoes that are hosts to important pests such as fruit flies (*Anastrepha sp.*) and sweet potato weevils (*Cylas* and *Euscepes*). The origin of these commodities must be determined and verified by the Phytosanitary Certificate, where required.

4.4.5 **Vessel’s documents**

On boarding the ship, the boarding party is usually conducted to the place allocated by the ship’s Captain or other designated Officer to review all relevant documents. At this time the Plant Quarantine Inspector should enter all perti-
documents secured from the ship’s documents in a Ship Inspection Information Form.

Documents to be inspected should include the following:

1. Ship’s travel itinerary – provides a list of ports and countries the vessel has visited on its current voyage.
2. Ship’s foreign cargo manifest – lists the nature and country/countries of origin of the cargo the vessel is carrying.
3. Stores list of provisions (fresh, dried and preserved), which are in the ship’s refrigerators and dry storerooms for consumption by the crew and passengers.
4. Passenger baggage declaration (where applicable) – is a list of items purchased by the passenger in foreign countries and that he/she intends to bring into the country.
5. Passenger list – of passengers the ship is carrying and gives their names, the number of passengers, the amount of baggage, their port of embarkation and their port of destination.
6. Crew list – the names and nationalities of all crew appear on this list.
7. Crew souvenir list – includes items purchased by the members of the crew while they were in foreign countries that they intend to bring back to their own country. Used personal effects are not included.

(Document 5, 6 and 7 may not necessarily be called for unless there is a historical or specific perceived threat posed by these categories).

In cases where the Plant Quarantine Inspector is unable to board the vessel as part of the boarding party, then the relevant ship’s documents should be obtained from the Customs Office at the port. Generally, port authorities and shipping agents know the cargo that any ship is carrying at least 24-hours prior to arrival. The Plant Quarantine Inspector should obtain this information, which would allow for effective planning of the inspection by gathering and studying available technical information.

4.4.6 Inspection of vessel’s stores

When the ship is boarded, the Plant Quarantine Inspector may deliver a copy to the Captain of the plant quarantine regulations with which the ship is obliged to comply while it is in territorial waters. This action is taken if the vessel’s Captain has not been previously given such information as the national strategy for promoting awareness and compliance with national phytosanitary regulations.

The following should then be undertaken by the Plant Quarantine Inspector:

- Inform the Captain that he/she wishes to proceed to inspect the ship.
- Request that he/she designate a ship’s officer, for example, the Chief Steward, to accompany him/her.
• Solicit any pertinent information from the Chief Steward regarding regulated articles and procedures relating to their storage or handling on board. The Inspector should already have pertinent information from the ship’s documents regarding regulated articles on board. He/she should have basic tools readily available. These tools should include the following:
  • flashlight
  • hand lens or magnifiers
  • knife
  • quarantine tags
  • sealing cord
  • vials and plastic bags
  • safety equipment such as gloves

4.4.7 The galley and stores

• Inspect for and note the quantity and origin of all fresh and stored produce. Special attention should be given to fresh produce, fruits and vegetables.

• Ask the Chief Steward about the origin of all fresh produce and fruits in the store. This information is invaluable in determining the phytosanitary risk of any commodity as it would suggest to the Inspector the possible pests associated that he/she should be looking for.

• When the Chief Steward does not know the origin of the stores then she/he must ask where they were purchased. For example, the ship may have taken supplies of fresh oranges in England, but this country obviously does not grow oranges; the fruit purchased in one country may have originated from a country where fruit flies are known to occur.

• Where necessary, examine packing material for clues as to the country of origin of some produce.

• Examine bags and boxes of stored produce especially grain for associated pests.

• Examine jute or burlap bags at the seams, especially bags carrying grain, flour, rice and spices, for the Khapra beetle and other pests of potential phytosanitary importance.

• Check corners, cracks and crevices and other storage packages for storage pests.

• Check the floors of the storerooms for dead or living pests, and collect for ID and risk determination.

• Use specimens to prepare a list of intercepted pests, the associated commodity and origin, if known, to determine the pest risks associated with certain plant products from a determined origin.
4.4.8 **The quarters**
- Inspect for high-risk plants or flowers that may be present in these areas.
- Inspect all fruit, paying special attention to those that may require sealing to reduce phytosanitary risk.

4.4.9 **The deck**
- Inspect the deck, especially on ocean vessels, for live insects that may be of phytosanitary concern, e.g. Asian Gypsy moth, swarming bees and wood-boring beetles.
- If an insect of phytosanitary significance is found, conduct a very thorough examination of the deck for other pests, and note the exact location where the pest was found.

4.4.10 **Inspection of cargo**
Cargo inspection is one of the most important duties of the Plant Quarantine Inspector since cargo represents a major pathway for pest introduction. Cargo inspection is used to verify compliance with phytosanitary requirements (ISPM 23, Section 2.3.2) related to the following examples:
- treatment
- degree of processing
- freedom from contaminants (e.g. leaves, soil)
- absence of unauthorized plants, plant products or other regulated articles
- consignment packaging and shipping requirements
- origin of consignment/lots
- point of entry

Procedures for cargo inspection can vary depending on various factors such as the following:
- country of origin
- the commodity type and its phytosanitary status
- the history of the pest associated with the commodity
- the size of shipment and
- phytosanitary risks as determined by PRA before importation

Particular categories of cargo likely to be imported include the following:
- grains and seeds
- plants including propagative plant material
- root crops
- fruits and vegetables
• cut flowers
• wood products including wood packaging materials

For cargo inspection the inspector should do the following:
• Have the following basic tools; Knife and brush, hand lens, sample bags/phials, labels
• Determine the category of the consignment
• Determine the regulatory status of the commodity (permitted or prohibited)
• Verify the integrity of the consignment
• Check the import requirements for each commodity
• Verify compliance with the phytosanitary requirements
• Select the samples
• Inspect the samples in proper lighting conditions
• Have list and identification keys of target pests of quarantine importance
• Take action based on degree of compliance, e.g. release, detain, treat, re-export, destroy or other

Before inspecting the cargo in the vessel holds, the Inspector examines the documentation provided by the Captain. The foreign cargo manifest should have been carefully reviewed and all pertinent information noted on the Ship Inspection Report Form. The Inspector also verifies the validity of Import Permits and Phytosanitary Certificates, where required.

During the review of the foreign cargo manifest, the Inspector does the following:
• Notes any prohibited or restricted articles that may only be imported under certain conditions
• Immediately notifies Customs and requests that such material remain aboard
• May order that the material in question remain aboard ship under prescribed safeguards until the ship leaves the territorial waters of Barbados

Prohibited materials can only be permitted if a special permit has been issued for the import of this material for scientific research, bio-control, education or other special purpose (ISPM 20 and ISPM 3).

Inspection procedures for cargo permitted to enter the country may vary depending on the size and nature of the consignment:
• Large shipments of grain should be inspected on board ship and, if necessary, adequate samples taken for further inspection.
• For each cargo category, inspections should be made to verify compliance with national regulations.
• Imported cargo from countries that have failed compliance in the past should be very carefully inspected.

• Cargo should be released once it meets the phytosanitary requirements of Barbados.

• Wood packaging materials, as defined in ISPM 15, should be checked for the certification marks approved by the IPPC (see ISPM 15).

• Packaging materials that do not meet the required certification may be destroyed or retained on the ship where practicable.

Inspectors should **always pay attention** to specific phytosanitary requirements and mitigation methods used by the exporting country and accepted by Barbados. Of particular importance is the use of irradiation as a mitigation method. In this case, live regulated pests may be found during inspection of the commodity, but this is acceptable since irradiation does not necessarily try to kill the pest but render them harmless (ISPM 18).

### 4.4.11 Inspection of a vessel’s hold

The inspection of a vessel’s hold is usually prioritized, based on pest risk analysis. Usually, the holds of vessels that carry high-risk commodities, or that have been in areas where quarantine pests exist, are thoroughly inspected. An example would be a cargo vessel with grain from India, a country where the Khapra beetle is known to occur.

In this situation, the Plant Quarantine Inspector should be present when the hold is opened. As it is opened, the Inspector looks for living insects and if he/she finds them, the following actions will be taken:

- **For flying insects** – the hold is first re-closed and safeguarded after which it is treated, applying an approved treatment. After verifying its effectiveness, specimens are collected for referral to the laboratory for their identification. If the treatment was considered to be effective, the hold may be reopened.

- **For crawling insects** – again, the hold is first safeguarded. The Officer should apply an approved treatment and collected samples should be sent to the laboratory for identification and for further action, if required. If the treatment was considered to be effective, unloading may proceed.

After the vessel’s holds are opened, the Officer should inspect for the possible presence of (a) pests of quarantine importance (referring to the Quarantine Pest List) or (b) regulated non-quarantine pests following which alternative actions may be applied (Table 1).

As unloading proceeds, the Inspector should keep monitoring the cargo for the possible presence of regulated pests. It should be kept in mind that when the hold is full, inspection is only feasible in the upper layers of the cargo; as unloading proceeds, the deeper layers can then be inspected.
When phytosanitary measures are recommended, the Inspector is responsible for the implementation of these measures and ensuring their effectiveness. After the hold is unloaded, the Inspector should continue examination of the hold itself - the floor, walls, etc. in search of possible infestations of storage pests.

**TABLE 1. Alternative phytosanitary actions taken after a vessel’s hold is opened**

<table>
<thead>
<tr>
<th>ALTERNATIVES</th>
<th>ACTION TO BE TAKEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>No pests present</td>
<td>• Release for unloading</td>
</tr>
<tr>
<td>Cosmopolitan pests</td>
<td>• Release for unloading and advise the agent on possible treatment</td>
</tr>
<tr>
<td>present</td>
<td></td>
</tr>
<tr>
<td>Regulated pests present</td>
<td>• Stop unloading and, after positive laboratory identification of pests, requisite phytosanitary measures applied</td>
</tr>
</tbody>
</table>

4.4.12 Inspection of container vessels

Most of the cargo transported in the region is by container. Hence, inspection procedures must be adapted to this means of conveyance. The Inspector should be aware of the following:

- A high level of risk occurs when the container is opened since pests that may have been shipped with the produce can escape at the time of opening.
- A pest could multiply rapidly during the period of confinement in the container (for example, dependent on the life-stage of the pest in/on the produce when the container is loaded, as well as on its rate of development).
- There may also be some risk of contaminating pests both on the outside of the container (e.g. snails or Gypsy moth) and inside empty containers, especially those that may have previously held regulated cargo.

4.4.12.1 For container ships

The inspection procedure may be as follows:

Upon arrival, the boarding party meets the Captain or designated Ship’s Officer where the Plant Quarantine Officer will deliver the relevant Plant Quarantine Regulations with which the ship is obliged to comply while staying in Barbados’ waters.
The Plant Quarantine Inspector should request the following documents: Manifest, Cargo plan, Phytosanitary Certificate(s) or other relevant documents, and Ship’s itinerary.

The Inspector should then inform the Captain that he/she will proceed to inspect the ship, requesting that an officer should be designated to accompany him/her. Inspection of the ship’s stores and garbage should also be conducted according to the procedure outlined above (Sections 2.3; 2.4).

4.4.12.1 Exterior inspection
- Determine the origin of the container
- Examine the undercarriage, sides, and ends of the container for pests, soil and other contamination

4.4.12.2 Unloading the container from the vessel
After unloading the container from the vessel, there are two possible alternatives:
- the container is opened at the port premises
- the container is transported to the final destination point and opened there

The latter case poses a potentially high risk as inspection distant from the port area may allow for wider distribution of pest organisms. Before inspecting the containers, the Inspector should schedule the inspection, making use of the documents provided by the Captain. The same conditions apply as were described above for cargo vessels.

Usual Target pests
- Snails: look for adult snails, snail eggs, and juvenile snails
- Insect larvae, pupae, egg masses
- Khapra beetle
- Bag worms

Check for the following:
- Contamination
- Soil
- Plant debris
- Animal excretions
- Ticks

4.4.12.2 Opening the container
When opening the container, the Plant Quarantine Officer should look for flying and crawling insects. If any such insects are intercepted, the Inspector may
request that the container be closed and recommend necessary control actions. After checking the effectiveness of the treatment, the unloading of the container can continue.

4.4.12.3 Unloading the contents of the container (Un-stuffing)
The Inspector will inspect the cargo, as unloading takes place, taking random samples and searching for pests of phytosanitary significance that could be associated with the cargo.

The Inspector should ensure that a representative random sample of the container is taken and not a limited sample from the front or the rear. Inspection is continued until completion. The size of the samples inspected will vary considering their risk. The Inspector should ensure that a representative random sample of the container is taken and not a limited sample from the front or the rear. When phytosanitary measures are prescribed, the Inspector is responsible for the implementation of those measures and their effectiveness.

After completion of unloading, the Inspector should inspect the empty container for possible secondary infestations of regulated pests.

4.4.13 Inspection of cruise vessels
Cruise vessels should be inspected since they may serve as potential pathways for the introduction of pests of phytosanitary significance. As cruise vessels usually stay in the port for relatively short periods, they may have to be handled differently from other ships.

Upon arrival of the cruise ship, the Plant Quarantine Inspector boards the ship with the boarding party and meets the Captain or designated ship's officer, delivering if necessary, a copy of the local Plant Quarantine Regulations that need to be complied with while staying in the port. After explaining the regulations, the Inspector requests that an officer should be designated to accompany her/him during the inspection.

One major concern of the Plant Quarantine Officer will be the ship's garbage. The Inspector ensures that the garbage is adequately safeguarded, that is, contained in appropriate bins and adequately covered.

The ship's stores should be inspected (Section 2.3). Determining the origins of fruit and vegetables is important. Improper disposal of unused fruit or parts of fruit and vegetables that may have been infested with regulated pests pose a potential risk. Cruise ships also tend to have various horticultural plant species on board that may be prohibited from entry because they are hosts to quarantine pests.

4.4.14 Inspection of yachts
The Caribbean Sub-region normally has hundreds of yachts sailing at any given time. These vessels would normally be expected to carry fresh produce and fruit, collected from different countries as they sail. There is, therefore, a certain de-
gree of pest risk associated with the movement of these vessels. Furthermore, many sailors may collect samples of exotic plants/cuttings, fruits or plant products that may pose a potential threat. On the other hand, it is not possible to inspect every yacht that arrives, especially since in most countries there is a lack of sufficient numbers of quarantine personnel to be stationed at every marina. Close collaboration with the Customs Service is very important in this regard. The effectiveness of such collaboration can be enhanced by providing adequate training in plant quarantine for Customs Officers.

In assessing the phytosanitary risks involved in the traffic of yachts, the major problems are mainly those of garbage disposal and movement of fresh produce and plants. Hence, the most important safeguard is ensuring compliance with local plant quarantine regulations through providing adequate information while the yachts remain in territorial waters.

4.4.15 Inspection of motor vessels and schooners

Hucksters are small-scale entrepreneurs involved in inter-island trade of agricultural produce (mainly fruit, vegetables and small livestock). Small motor vessels or schooners represent their chief mode of transport. Much of the produce is usually packed in wooden boxes, cardboard cartons or jute or polythene bags. The situation at most ports when this trade is underway tends to be extremely chaotic, making inspection very difficult for the Quarantine Officer.

Hucksters generally travel the same routes, so that the Inspector will know with some degree of certainty their itinerary, products shipped and their origin. With this information, the Officer can decide which pests of quarantine importance are likely to be associated with the cargo from any particular country and what kind of inspection procedures should be implemented.

4.4.15.1 Pest interceptions

All plant pests intercepted during inspection should be identified and recorded, either by the Inspector or by a specialist and verified by a specialist or accredited institution.

4.4.16 Military vessels

Usually, military vessels receive courtesy treatment at the port of arrival. The Quarantine Inspector boards the vessel when permission has been granted and explains his/her mission and purpose and requests to inspect the stores and monitor the garbage. Should any problem be encountered, the ship’s Master should be notified and cooperation requested in applying the specified quarantine measures.

4.4.17 Inspection of aircraft

Aircrafts move high volumes of passengers and cargo over long distances in relatively short periods of time. They can be considered as potent pathways for pest spread. Aircraft can transport living pests from country-to-country with suffi-
cient rapidity to ensure their introduction and spread in a new country. Notwithstanding such risks, inspection should be done in such a way so as not to unduly hinder passenger traffic and trade.

4.4.18 Passenger aircraft on short stops (Intransit)

In many instances, in-transit or stop-over periods made by Caribbean intra-regional carriers can be very brief, sometimes only 10-15 minutes. Similarly, transit passengers invariably remain on board. In these circumstances, the phytosanitary risk posed by the carrier itself is negligible and inspection should be waived.

Where a specific threat is identified with flights of a particular origin, this should be dealt with by pre-inspection by the NPPO of the country of origin using an agreed protocol with the NPPO of the country of import.

The Quarantine Officer should be present in the baggage arrival hall at the Customs inspection area. Cooperation with Customs who do the actual baggage inspection should be properly established so that plant material or other regulated articles are referred to the Plant Quarantine Officer present to assist with any interception of plants or plant products.

NPPOs may also utilize a Customs Declaration Form requiring every passenger to declare whether he/she is carrying any plants or plant products. Under the green-line and red-line facility the inspector does the following:

- Randomly inspects baggage of passengers entering the green line
- Inspects all passengers’ baggage entering the red line and referred by Customs
- Retains all fresh produce, cut flowers and fruit for further inspection, including those with accompanying phytosanitary certificate

The Inspector may select one of the following options depending on the results of the inspection:

- Release items and products that are deemed free of regulated pests and pose no phytosanitary risk
- Confiscate for destruction all items/products found to have pests of phytosanitary importance confiscated for destruction
- Retain for further examination any material that has unidentified pests that may be of phytosanitary interest
- Take samples and immediately send them for identification
- Retain samples of the pest with adequate records for future reference

4.4.19 Passenger aircraft on long stops

Inspection of planes on a long stop-over is important. The inspector should look for the following when inspecting the aircraft:
• Pests aboard the aircraft
• Prohibited stores that may easily be carried off the aircraft by unauthorized personnel
• Contraband left aboard by crew or passengers
• Contamination of aircraft by soil or crushed fruit

The Inspector takes the following steps:
• Boards the cabin after all passengers have left the aircraft.
• Quickly examines the cabin area, storage compartments and galley for any plant products such as fruit, cut flowers or other regulated material that may have been left by passengers.
• Places regulated items in a plastic bag and seal before leaving the cabin. Such confiscated plant products will be treated as international garbage and properly destroyed.
• Joins the Custom Officers for baggage inspection after inspecting the plane.

Note: Aircraft inspections should be completed before any ground staff for cleaning or caterers are allowed on the aircraft. Inspection of the aircraft should be completed as quickly as possible so that airline ground handlers, caterers, etc. may begin their jobs.

4.4.20 Inspection of cargo aircraft

Cargo aircraft are important vehicles for pest spread. The Inspector should have the necessary documentation and information from Customs regarding the cargo, time of arrival, etc. Documents will include the following:
• Manifest
• Phytosanitary Certificate(s)
• Itinerary

The Inspector should do the following:
• Inspect the hold carefully for crawling or flying insects as the cargo is being offloaded
• Inspect the hold thoroughly after the consignment is removed from the hold
• Disinfect if contamination or regulated pests are found
• Collect regulated pests or unknown pest for identification
• Inspect the cargo after removal (plants or of plant origin) and other regulated articles
• Document findings, including details of aircraft origin, time of arrival cargo identity, associated pests or other regulated articles found

If during inspection of the cargo, a pest of phytosanitary importance is intercept-
ed, the Inspector should retain the consignment, complete an adequate confiscation/retention form, and take the following actions:

- Send samples to the laboratory or specialist for confirmation of the primary identification
- Implement appropriate phytosanitary measures approved by the PQU

If free of pests of phytosanitary significance, the consignment is released.

4.4.21 Inspection of private aircraft

Private aircrafts should be treated similarly to commercial aircrafts. However, the problem on most of the small islands is that private aircraft may have irregular arrival times when plant quarantine personnel may not be on duty. In these cases, the situation may be handled in a similar fashion as for yachts, that is, in close collaboration with the Customs Service.

4.4.22 Inspection of military aircraft

International agreements and diplomatic courtesies may apply to military aircraft in which case they are not normally or routinely inspected by the PQU. Where there is a strong suspicion of phytosanitary risk, the following procedure should be adopted:

- Seek the captain’s permission to board and inspect the aircraft through the appropriate national authority (Protocol or Foreign Affairs office)
- Inspect the vessel in a similar way as military vessels (Section 2.10)
- Keep all doors and exits closed until the inspection is completed
- Remove any fresh fruit or vegetables and other regulated articles of phytosanitary risk found in the galleys for inspection and destruction
- Inspect garbage containment facilities and ensure that appropriate safeguards are in place
- Garbage from the galleys should only be removed for appropriate treatment or disposal

4.4.23 Garbage Inspection and Disposal

Garbage aboard a vessel should be carefully handled, as this may be an important pathway for pest introduction. Garbage should be placed in sturdy leak proof, covered containers so as to prevent the escape of any living plant pests. These should be placed inside the rails of the vessel. It is important to safeguard against any leakage of liquids from these containers as regulated pests may be spread in this way. All garbage bins should be inspected in order to verify that they are adequately covered and are free of leaks. All such garbage must be kept aboard the vessel while in port and should not be allowed to be dumped in the country unless arrangements exist for adequate safeguarding and disposal.

However, if the ship remains in port for an extended period and there is need
to remove garbage, then this should be done under the supervision of the Plant Quarantine Officer and /or by compliance agreement. International garbage must not be disposed of at the local garbage dump. Ideally, disposal should be by incineration. If the PQU does not have its own incinerator, it may be possible to contract out this service under a compliance agreement as occurs in some countries. As an alternative treatment to incineration, steam sterilisation can be used. Many ships, especially cruise liners, have incineration facilities and may selectively incinerate certain kinds of garbage or all garbage. These incinerators should be checked to ensure that all garbage that pose phytosanitary threats is properly handled and disposed.

4.5 Inspection of Sea and Airport Facilities

Inspectors are responsible for all quarantine activities that take place in the areas of the seaport or airport. This means that besides inspection of the cargo, baggage and vessels or aircraft, they are also responsible for the phytosanitary status of the warehouses and facilities situated at these sites. These facilities are considered high-risk areas and have to be dealt with appropriately through a rigorous inspection programme. At these facilities, especially at the wharves, the main quarantine problem is generally that of storage pests of phytosanitary importance. However, since there is a strong likelihood that undetected quarantine pests might first escape into Barbados on the property of the ports of entry, the PQ unit staff should be given every facility to inspect the environs of these facilities as necessary. Security arrangements must be made to allow PQ officers adequate access to these areas and Sentinel or Indicator plants should be strategically planted and examined on a regular basis to check for any presence of new pests.

4.6 Inspection of warehouses

- Inspect warehouses once per month.
- Examine the stored produce as well as the floor and structures for flying and crawling insects. Generally, several cosmopolitan storage pests may be detected.
- Collect any pests of phytosanitary or potential phytosanitary importance.
- Place specimens in glass vials containing 70 percent alcohol where necessary.
- Send unidentified specimens to the laboratory or specialist for identification.
- Prepare a report, which should contain the following information:
  - date of the inspection
  - location
  - infestation level and associated commodity if known
When a pest of phytosanitary significance is confirmed, the Inspector proceeds as follows:

- Inform the port or airport authorities that the site is subject to quarantine.
- Deliver the order to that effect, signed by the Chief Plant Quarantine Officer.
- Instruct as to the appropriate quarantine measures that will be implemented as approved by the Chief Plant Quarantine Officer who will be responsible for the implementation of the treatment.

After confirming the efficacy of treatments or other measures, the Inspector will inform the port and airport authorities or those responsible for the site of the lifting of the quarantine. When the laboratory report confirms the absence of pests of quarantine significance, the Inspector may send a report to the port or airport authorities stating the following:

- date of the inspection and warehouses that were inspected
- infestations that were found to occur
- control recommendations
- a copy of the report is sent to the PQU management

### 4.7 Postal Inspection

For mail inspection, plant quarantine officers must work in close collaboration with customs and postal authorities. The full-time presence of a quarantine officer in the post office is not practical but there should be an officer on call for this operation. Customs would then advise the plant quarantine officer when plants or any other regulated articles are detected or are declared by the sender of the package.

General procedures to be followed are outlined below:

- Examine the written Customs Declaration on the outside of the package.
- Determine the nature of the regulated articles inside the package that must be examined.
- Check for accompanying Phytosanitary Certificates and other documents related to certification of the contents.
- Evaluate the destination address. Military bases, colleges and universities may have resident foreign nationals who may receive foodstuffs from their home countries.
• Thoroughly inspect parcels containing high-risk plant materials, especially planting materials, from high-risk countries.

Inspect the contents of the parcel as follows:
• Determine if the material contained in the parcel is prohibited or admissible.
• Look for regulated pests.
• Isolate the pests and prepare them for submission for identification.
• Remove any prohibited packing material or contaminants.
• Complete necessary notification forms/reports related to any phytosanitary action taken.

Material that is free of pests or of a non-prohibited status, or that can be effectively treated so as to eliminate the pest risk, may be allowed to enter the country. In addition to prohibited materials, some of the conditions of denial of entry are as follows:
• if the package has been abandoned
• if the package is excessively infested or infected
• if the package contains soil
• if the package cannot be adequately treated to eliminate a pest risk

In all cases, however, all action to be taken must be guided by existing Plant Quarantine Legislation and Regulations as well as national and international postal law, e.g. notification and seizure.

A recent upsurge in the incidence of seeds and other plant material being imported through Amazon.com is of concern and measures should be taken to enlist the assistance of Customs and the Amazon.com staff in Barbados in identifying and submitting such packages for examination by the PQU in similar fashion to the treatment of such material moving in the Government Postal service.

4.8 Interfacing with the Diplomatic community

Diplomatic immunity is applied to certain high-ranking officials of foreign embassies or international or regional organizations as identified by the Government. However, members of this diplomatic community from time-to-time violate the national phytosanitary regulations, often because of lack of knowledge of requirements.

Typically the Quarantine Officer may face, for example, a Minister or other Diplomat returning from a diplomatic mission bringing into the country:
• exotic plants gifted by a recently visited foreign government
• exotic fruit or rare species of seeds, e.g. palm for planting
• cuttings from an exotic species of plant
• other regulated material

In cases where it is obvious that these materials are in their possession, the Inspector should do the following:

• Approach the Diplomat courteously and advise that the regulated article be inspected as required by national phytosanitary laws and regulations
• Advise of possible pest risk to the country
• Once the article has been given, if the Inspector deems that there is no immediate risk release the article
• If time is needed to carefully assess the associated risk through inspection or other, the article is retained and a retention form is issued; the Diplomat is advised what needs to be done before release
• Follow through as soon as possible to determine admissibility or associated level of risk
• Take necessary phytosanitary measure and if there is no risk release, destroy where required
• Should a Diplomat refuse to release a regulated article, immediately contact the head of the PQU for further necessary action

4.9 Post-Entry Quarantine

The objective of growing imported plants under post-entry is to detect the presence of certain pathogens and other organisms which may not be apparent at the time of inspection. The imported plants are usually grown under secluded or controlled conditions for a period of six months to two years, depending on the type of plant material and the time required for symptoms to appear. There are several types of post-entry quarantine, according to the type of plant material grown, the assessed risk and the facilities which are available at the port of entry. These are briefly described below.

4.9.1 Growing Plant Materials in Open Fields

This is done for lower-risk imported plant materials, particularly in countries that lack the required facilities to grow plants under secluded conditions. Under this system, the concerned field or fields are subjected to regular inspections and surveys in order to detect the possible presence of regulated pests. The fields are usually owned by the Importer, and the Plant Quarantine Officer monitors the concerned location for compliance, under a compliance agreement, with certain specified conditions, namely the following:

• isolation of the imported plants from other plants
• immediate reporting to the quarantine service of any pests detected or abnormal conditions observed
• no removal of plants from the fields
• any other conditions, which may be specified in a compliance agreement properly executed between the quarantine service and the grower

The violation of any of the provisions of this agreement may justify its cancellation and the removal of the quarantined plants for destruction.

4.9.2 Growing Plants under Secure Conditions

This is the usual post-entry quarantine procedure utilised as it is required for plant imports of medium to high pest risk to prevent accidental pest escape. Under this procedure, the imported plants are grown in enclosed structures such as greenhouses, screen houses and glasshouses. The particular type of structure required depends on various factors like assessed pest risk, type of plants grown and their associated pests, and the resources of the importing country. For instance, glasshouses are usually used for very high-risk plant materials which may be a pathway for virus and virus-like organisms which are usually transmitted by insect vectors. These facilities require strict temperature and humidity controls to ensure optimal growing conditions for symptom expression as well as survival of the plant material.

Regardless of the type of structure which is used, plants grown under post-entry quarantine must be regularly inspected during the growing period and, if signs or symptoms of the concerned quarantine pests appear, the affected plants should be removed and appropriately destroyed. A good pest management programme should be established and maintained during the post-entry quarantine period.

4.9.3 Requirements for Post-entry Quarantine Facilities

The following are conditions which must be in place for adequate post-entry facilities:

1. Structures should be built with strong materials (for example, aluminum, glass, acrylic plastic, reinforced concrete) and a fine mesh screen installed to protect against insect entry.
2. The site must be sufficiently isolated from other growing areas and must be properly fenced.
3. Entry to the facility should be restricted to authorized staff, and appropriate warning signs should be placed to advise the public.
4. The number of plants placed in the facility should be limited so as to allow sufficient room for easy manipulation and inspection.
5. Double doors must be installed at the entrance of the facility in order to minimize the risk of pest escape.
6. The facility should be surrounded with a channel of water to which an
insecticide has been applied in order to prevent the entrance of crawling insects. This, however, is not common any longer.

7. The station should be appropriately staffed.

8. Adequate equipment must also be in place for the inspection and the treatment of the plants. For this reason, it is advisable that the facility be located adjacent or close to a quarantine laboratory.

9. An irrigation system for watering the plants is required; raised concrete benches should be built for holding the pots in which the plants are to be grown.

10. There should be accommodation within the facility for isolation of plants in separate areas, if and when required.

4.9.4 Intermediate (Third Country) Quarantine Stations

Intermediate quarantine is the interim quarantine of plants in a country in which these plants do not originate or are not grown, for example, as is the case with tropical crops grown under post-entry quarantine in a temperate country. Cocoa germplasm from West Africa, for example, used to be quarantined at Kew Gardens in England (third country) before being shipped to the Cocoa Research Station in Trinidad. Since this practice has stopped, such material was quarantined in Barbados, which does not grow cocoa.

Under this system, an accidental pest escape would not pose a substantial threat to the third country’s agriculture. This alternative is mainly employed for introductions of high-risk propagative materials and host-specific pests when facilities are not in place at the country of import or the accidental risk of introduction is deemed excessive.

4.10 Documentation/Certification systems

Completed Application forms for Import Inspection, along with Inspection Report, Pest Interception, Treatment, copy of the PC received, final release or re-shipment or destruction of each consignment, shall be maintained in the PQ office.

4.10.1 Procedures

The PQU should maintain guidance documents, procedures and work instructions as appropriate covering every aspect of the certification system. Key elements include the following:

- instructions relating to Phytosanitary Certificates:
- control over issuance (manual or electronic)
- identification of issuing officers
- inclusion of additional declarations
• completion of the treatment section of the certificate
• certified alteration
• completion of Phytosanitary Certificates
• signature and delivery of Phytosanitary Certificates
• instructions relating to other components:
• procedures for working with industry
• sampling, inspection and verification procedures
• security over official seals/marks
• consignment identification, traceability, and security
• record-keeping.

4.10.2 Records
In general, records should be kept concerning all activities undertaken in the PQ system. Thus, a copy of each certificate and permit issued should be retained for purposes of validation and “trace back”. For each consignment for which a Phytosanitary Certificate or Import Permit is issued, records should be kept as appropriate on the following:
• any inspection, testing, treatment or other verification which was conducted on a consignment basis
• the names of the personnel who undertook these tasks
• the date on which the activity was undertaken
• the results obtained
• any samples taken
It is also useful to keep equivalent records for non-conforming consignments for which Phytosanitary Certificates or Import Permits were not issued.
The NPPO should be able to retrieve these records when required, over an appropriate period of time. The use of secure electronic storage and retrieval is recommended for standardized documentation of records.

4.10.3 Consignment tracing
Consignments and their certification should be traceable as appropriate through all stages of production, handling and transport to the point of export. If the PQU becomes aware, after certification, that an exported consignment may not have complied with the importing country’s phytosanitary requirements, the importing country’s NPPO should be so advised as soon as practicable.

4.10.4 Communication within the exporting country
The PQU should have procedures in place for timely communication to relevant personnel and to industry concerning changes in the following:
• importing country phytosanitary requirements
• pest status and geographical distribution, both in Barbados and the exporting or importing country
• operational procedures and any changes thereto

The PQU should put in place, for non-conforming consignments, a procedure which enables rapid communication to all affected industry parties and certification personnel. This is in order to facilitate resolution of the problem and to prevent re-submission of the consignment unless approved corrective action has been undertaken.

4.10.5 Communication outside the exporting country

The Barbados PQU should do the following:
• liaise with the nominated representatives of relevant NPPOs to discuss phytosanitary requirements
• make available a contact point for importing country NPPOs to report cases of non-compliance
• liaise with the relevant Regional Plant Protection Organizations and other international organizations in order to facilitate the harmonization of phytosanitary measures and the dissemination of technical and regulatory information

4.10.6 Incident review

The PQU should establish procedures for investigating reports from importing countries of non-conforming consignments covered by a Phytosanitary Certificate. If requested, a report of the outcome of the investigation should be supplied to the importing country.

4.10.7 System review

The PQU should periodically review the effectiveness of all aspects of its export certification system and implement changes to the system if required.

4.11 Public Awareness and Cooperation in Plant Quarantine

Public awareness programmes play an important role in securing cooperation and support for plant quarantine laws and regulations, as well as implementation of regulatory measures. Cooperation with Customs, Immigration and Postal Authorities should also be fostered in order to ensure adequate support of these agencies.

Public awareness programmes may rely on the use of posters depicting the need for quarantine measures. These may be placed at international airports, maritime ports and postal offices. In addition, booklets on plant quarantine may be distributed to travel agencies, airlines, shipping agencies, importers, exporters
etc., in order to make the regulated industry and public aware of the need for quarantine laws and regulations and their compliance.

A public awareness programme is necessary to inform the public and stakeholders about the national phytosanitary regulations and their importance for protecting national plant resources and food security. Such a programme may include the following:

- Strategically placed informative posters (at international airports, maritime ports, community centres in farming districts and postal offices) depicting the need for phytosanitary measures and encouraging public support.
- Booklets highlighting phytosanitary regulations and urgent issues may be distributed to travel agencies, airlines, shipping agencies, importers, exporters, etc. in order to increase compliance.
- Radio, television and the press is also an effective way of informing of phytosanitary issues and phytosanitary legislation and regulations.
- Participation of phytosanitary personnel in meetings of seed and nursery associations and farm groups and at trade and agricultural shows.
- Development of relevant curricula material for educational institutions.
- Development of curricula for stakeholders, importers, exporters and regulatory border agencies for inclusion in their training programmes.
- Open days and seminars specifically highlighting threats, consequences and achievements, exhibiting specific pests and their potential for economic damage, social consequences, etc.

### 4.12 Official Ports of Entry

The official ports of entry into Barbados are currently the Bridgetown Port which encompasses the Shallow Draught, The Grantley Adams international Airport, Port St Charles, Port Ferdinand and the Cement Plant, St Lucy.

It is against the law for anyone to enter or bring items into Barbados at any other point on the shore or from the air. However, with containerization, Customs and PQ officers are called to inspect containers at various sites outside of the designated ports having been brought there under seal with the permission of Customs. It is important that PQ officers be provided with all the necessary conditions for conducting their examinations by the relevant public or private sector agencies.

### 4.13 Inspection of commodities which might conceal Contraband Items

The rule of thumb is that if a Plant Quarantine Officer, in carrying out his/her official duties, encounters a situation which, in his/her best judgment and experi-
ence, suggests that there is a possibility that contraband items might be present in the commodities that he/she is examining or has examined, he/she should forthwith bring the matter to the notice of the Customs and Police. If there is also a possibility of regulated pests being introduced into the Island with the commodities he should ensure that the Police and Customs are made aware of this and are advised on how the material should be treated to ensure that such pests are not brought into the Island.

If the PQ officer encounters a similar situation while examining commodities destined for export, he/she should take the same action as described above.

### 4.14 Uniforms for Plant Quarantine Officers

It is desirable that all Plant Quarantine Inspectors be provided with distinctive recognizable uniforms that are of similar, yet distinctive, design to uniforms worn by Customs Officials at the ports of entry.

### 4.15 Ethics for PQ Officers

#### 4.15.1 Relationship with the Public

Employees of the PQU are expected to do the following:

- Serve the public in an unbiased and impartial manner
- Be polite, helpful and accessible in their dealings with the public, at all times treating members of the public as customers who are entitled to receive high standards of service
- Have regard for the circumstances and concerns of the public in performing his or her official duties and in the making of decisions affecting them
- Not unfairly discriminate against any member of the public on account of race, gender, ethnic or social origin, colour, sexual orientation, age, disability, religion, political persuasion, conscience, belief, culture or language
- Not abuse his or her position in the Public Service to promote or prejudice the interest of any interest group
- Recognise the public’s right of access to information, excluding information that is specifically protected by law

#### 4.15.2 Relationship among Employees

Employees of the PQU are expected to -

- co-operate fully with other employees to advance the public interest;
- execute all reasonable instructions by persons officially assigned to give them, provided these are not contrary to the provisions of the Constitution and/or any other law;
- refrain from favouring relatives and friends in work-related activities;
• use appropriate channels to air his or her grievances or to make representations;
• Contribute to the optimal development, motivation and utilisation of the PQU;
• deal fairly, professionally and equitably with other employees, irrespective of race, gender, ethnic or social origin, colour, sexual orientation, age, disability, religion, political persuasion, conscience, belief, culture or language.

4.15.3 Performance of Duties

Employees of the PQU are expected to do the following:
• strive to achieve the objectives of the PQU cost-effectively and in the public’s interest
• be punctual in the execution of their duties
• execute their duties in a professional and competent manner
• not engage in any official action or decision-making process which may result in improper personal gain
• be honest and accountable in dealing with public funds, and use the public service’s property and other resources effectively, efficiently, and only for authorised official purposes
• report to the appropriate authorities, fraud, corruption, nepotism, mal-administration and any other act which constitutes an offence, or which is prejudicial to the public interest that they discover in the course of their official duties
• give honest and impartial advice, based on all available relevant information, to higher authority when asked for assistance of this kind
• honour the confidentiality of matters, documents and discussions, classified or implied as being confidential or secret

4.15.4 Personal Conduct and Private Interests

Employees of the PQU are expected to do the following:
• dress and behave in a manner that enhances the reputation of the Public Service while carrying out official duties
• act responsibly as far as the use of alcoholic beverages or any other substance with an intoxicating effect is concerned
• not use their official positions to obtain private gifts or benefits for themselves during the performance of their official duties nor accept any gifts or benefits that may be construed as bribes
• not disclose any official information for personal gain or the gain of others
4.16 Fumigation Treatments used by the Barbados PQU

The following are the basic treatments used by the PQU for disinfection of consignments. Fumigation is the usual method used for disinfection of consignments. Fumigation is carried out using one or other of the following fumigants at this time: Methyl Bromide or Phosphine (Phostoxin). The Plant Quarantine Inspector’s function in fumigation treatments is to refer consignments slated for undergoing such treatment to qualified contracted industry specialists and to monitor the process.

4.16.1 Characteristics of fumigants

- Highly toxic to the target pest
- Nontoxic to plants and vertebrates (including humans)
- Easily and cheaply generated
- Harmless to foods and commodities
- Inexpensive
- Non explosive
- Nonflammable
- Insoluble in water
- Non persistent
- Easily diffuses and rapidly penetrates commodity
- Stable in the gaseous state (will not condense to a liquid)
- Easily detected by human senses

Do not fumigate the following:

- Baking powder
- Blueprints
- Bone meal
- Butter, lard, or fats, unless in airtight containers
- Charcoal (high absorption capacity)
- Cinder blocks or mixed concrete and cinder blocks
- Electronic equipment
- Feather pillows
- Felt
- Furs
- High protein flours (soybean, whole wheat, peanut)
- Horsehair articles
- Leather goods
- Machinery with milled surfaces
- Magazines and newspapers (made of wood pulp)
- Magnesium articles (subject to corrosion)
- Paper with high rag or sulfur content
- Photographic chemicals and prints (not camera film or X-rays)
- Natural rubber goods, particularly sponge rubber, foam rubber,
  - Reclaimed rubber including pillows, mattresses, rubber stamps, and upholstered furniture
- Rug pads
- Silver polishing papers
- Woolens (especially angora), soft yarns, and sweaters
- Viscose Rayon fabrics

4.16.2 Toxicity

The toxicity of a fumigant depends on the respiration rate of the target organism. Generally, the lower the temperature, the lower the respiration rate of the organism which tends to make the pest less susceptible. Fumigation at lower temperatures requires a higher dosage rate for a longer exposure period than fumigation at higher temperatures.

4.16.3 Mode of action

Fumigants vary greatly in their mode of action. Some kill rapidly while others kill slowly. In sub-lethal dosages, some fumigants may have a paralyzing effect on the pest while others will not allow the pest to recover. Some fumigants have no effect on commodities while others are detrimental even at low concentrations. Commodities vary in their sorption of fumigants and in the effort required to aerate the commodities after fumigation.

4.16.4 Currently Authorized Fumigants

Methyl bromide (MB), Phosphine (Phostoxin)

4.16.4.1 Methyl bromide

Methyl bromide (MB) (CH3Br): Colorless, odorless, nonflammable chemical. It boils at 38.5°F and has a very low solubility in water. As a gas, MB is three times heavier than air. As a liquid at 32°F, 1 pound of MB is equivalent to 262 ml. For ease in transportation and handling, MB is compressed and stored in metal cylinders as a liquid.

Properties and use

Methyl Bromide is an effective fumigant for treating a wide variety of plant pests associated with a wide variety of commodities. It is the most frequently used
fumigant in quarantine fumigations. It may also be used to devitalize plant material. MB is effective in treating the following pests:

- Insects (all life stages)
- Mites and ticks (all life stages)
- Nematodes (including cysts)
- Snails and slugs
- Fungi (such as oak wilt fungus)

4.16.4.2 Phosphine (Phostoxin)

ECO2FUME® fumigant gas is a nonflammable, premixed mixture of phosphine and carbon dioxide. The phosphine is liquefied and mixed with carbon dioxide in high-pressure cylinders for shipment. Phosphine, the active ingredient, makes up 2% by weight (2.6% by volume) of the product. Carbon dioxide is used as a propellant and a flame inhibitor, making the product nonflammable in air.

Precautions

Do not store Phosphine near heat or open flame. Do not drop, puncture, or incinerate the cylinder. Under pressure, ECO2FUME® is a poisonous liquefied gas. The product is withdrawn from the cylinder as a liquid but dispensed as a gas. VAPORPH3OS® consists of 100% phosphine gas packaged in high-pressure gas cylinders.

Unlike solid phosphide fumigants, the phosphine is not generated through a chemical reaction, and its release is instantaneous. Phosphine will spontaneously ignite in air. It is dispensed as a gas from the cylinder and can be safely blended with carbon dioxide to less than 3% volume (30,000 ppm) or diluted with the surrounding air to 1% volume (10,000 ppm) to eliminate the flammability hazard.

Phosphine (PH) is highly toxic to humans and other animals. Avoid exposure to non-target organisms. Phosphine is colorless, and at low concentrations has the odor of decaying fish or garlic. Intermittent low concentration exposure may cause headaches, malaise, ringing of ears, fatigue, nausea, and chest pressure. Moderate exposure causes weakness, vomiting, and pain in the stomach and chest with difficult breathing. Phosphine gas reacts with moisture to form phosphoric acid, which causes pulmonary edema. Phosphine can react with certain metals and cause corrosion (especially at higher temperatures and lower relative humidity).

Gold, silver, copper, brass, and other copper alloys are susceptible to corrosion by phosphine.

Remove or protect the following items prior to fumigation with phosphine:

- Batteries and battery chargers
• Brass sprinkler heads
• Communication devices
• Computers
• Electric motors
• Electronic or electrical equipment
• Fork lifts
• Smoke detectors
• Switching gears
• Temperature monitoring systems

Appendix 18 provides some more details on the characteristics of Methyl Bromide.
The Barbados Plant Quarantine (PQ) manual is designed as a reference tool for use by Plant Quarantine Officers to carry out their everyday duties related to protecting the biodiversity of Barbados from the direct and indirect effects of introduced pests (insects and diseases).

This manual provides hands-on guidance for carrying out the various operations involved in Pest Surveillance. It is presented from a PQ perspective which emphasizes the PQ Unit’s commitments to determine and certify the presence or absence of quarantine pests in Barbados but also encompasses the aspects of Pest Surveillance that are relevant to the work of other agencies such as the Plant Protection, Entomology and Plant Pathology departments.

There are two categories of Surveillance: General Surveillance and Specific Surveys.

5.1 Objectives

This section on Surveillance is intended to provide a working guide for the Plant Quarantine Officers of Barbados to assist them in the performance of their duties related to carrying out Pest Surveillance activities.

5.2 Legal Framework

The Barbados Plant Protection Act of 2007 and the Plant Pest and Disease Eradication Act of 1985 are the current legal authorities under which the PQU operates. The Plant Pest and Disease Eradication Act is slated for incorporation in the Plant Protection Act in an imminent amendment. These Acts, and their pending regulations, give PQ Officers the right to enter and access properties capable of harbouring pests and diseases; examine commodities, carriers and warehouses; take samples for determination, verification or testing the status of pests; and impose reasonable and acceptable measures concerning treatments and or disposal of prohibited or uncertified commodities.

5.3 Infrastructure

The following minimal requirements should be in place for allowing proper work on surveillance to be conducted by the Plant Quarantine Unit (PQU):

- Familiarity with and access to the current PQ legislation of Barbados
- Adequate inspection facilities and equipment (work space or desk with appropriate lighting, microscope or good hand lens, flashlight, knives, forceps, vials, plastic bags, etc.)
• Quarantine/Target Pest List - This list should comprise the highest priority organisms of phytosanitary significance in terms of their potential threat to agricultural production and the country’s plant germplasm resources. The organisms should be categorized as a result of Pest Risk Analyses.

• Data sheet for each pest on the target pest list

• Official forms, record books, orders and regulations related to PQ

• Insect and disease taxonomic keys

• Databases on quarantine pests

• Updated information on pest outbreaks

• Up to date copies of the International Standards for Phytosanitary Measures (ISPMs)

• Copy of the International Plant Protection Convention (IPPC) and the World Trade Organization Sanitary and Phytosanitary Measures (WTO/SPS) Agreements

5.4 The Plant Quarantine Unit and Surveillance

Pest surveillance has a key role in the overall mandate of the PQU unit since surveillance provides the data on the presence or absence of regulated pests in the country. That information forms the basis for the development of Pest Risk analyses, Pest Free areas, etc. PQU provides the following services that are of direct relevance to pest surveillance:

• Providing assurance to importing countries that consignments exported from Barbados are free from pests of quarantine significance through globally accepted export certification practices.

• Assisting in undertaking surveys (jointly with other agencies) for establishing the presence or absence of regulated pests in order to control, contain or eradicate them.

• Assisting in performing the Pest Risk Analyses that are required to establish the phytosanitary requirements for the importation of plants, plant products and regulated articles in relation to the phytosanitary situation in the countries of origin.

These services are obligations of the Government as signatories of the IPPC and SPS. The Plant Quarantine Unit collaborates with a number of other Governmental agencies in carrying out its functions related to Surveillance. These include its sister agencies in the Plant Protection Section of the Ministry of Agriculture, the Customs, the Police Department and the Government Information Service.
Elements of a WTO/IPPC compliant Plant Pest Surveillance System for Barbados

The following is a listing of the features which characterize a WTO/IPPC compliant Plant Health surveillance system for Barbados. Note that all elements must be fully documented to ensure transparency to queries by interested parties such as trading partners, other WTO/IPPC signatories, etc.

- Capacity to conduct general surveillance
- Capacity to conduct specialized surveys
- Capacity to authoritatively identify pests or to have them identified
- Access to adequately maintained Official Pest lists
- Rapid Response capability
- Consistent use of modern techniques to document, map, query and analyse pest incidence data
- Clear lines of coordination of the various surveillance functions carried out by different agencies
- Strong linkages between the Phytosanitary certification system and Subject Matter Specialists
- All systems fully documented
- All systems in accord with WTO/SPS/IPPC standards, guidelines and protocols
- Fully documented methodology for identifying the pests chosen for the various types of survey
- Regular systematic monitoring of National, Regional and International Quarantine pest movements
- Maintenance of an Early Warning system on new pest introductions in trading partner countries
- Capacity to develop adequate educational materials for identification of pests at the farmer, extension officer and Research Scientist levels
- Capacity to widely disseminate materials and information to all relevant parties, e.g. via Internet, television programmes, skits, etc.
- Getting early reports of interceptions on all imported consignments at all ports of entry in Barbados
- Getting, documenting and discussing early reports of interceptions by trading partners of quarantine pests on commodities exported from Barbados
- Constant updating of information based on the pest lists of trading partners
- Utilizing staff from all technical sections of the Ministry of Agriculture to
service surveillance functions in emergency situations

- Regular formal training of senior staff of the divisions involved in surveillance activities, who can then conduct in-service training of junior staff
- Regular informal in-service training of staff as required

5.6 ISPMs directly related to Surveillance

The International standards that are directly concerned with matters relating to surveillance are listed below:

- Principles of Plant Quarantine as related to international trade: ISPM 1
- Guidelines for Surveillance: ISPM 6
- Determination of pest status in an Area: ISPM 8
- Requirements for the establishment of Pest Free Places of Production and Pest Free production Sites: ISPM 10
- Pest Risk Analysis for Quarantine Pests ISPM 11
- Pest reporting: ISPM 17
- Guidelines for the preparation of regulated pest lists: ISPM 19
- Requirements for the establishment, maintenance and verification of Areas of Low Pest Prevalence: ISPM 22, ISPM 29
- Methodologies for sampling of commodities: ISPM 31
- Categorization of commodities according to their pest risk: ISPM 32

5.7 Definitions

Additional declarations: A statement that is required by an importing country to be entered on a phytosanitary certificate and which provides specific additional information pertinent to the phytosanitary condition of a consignment [FAO, 1990; revised ICPM, 2005]

Clearance (of a consignment): Verification of compliance with phytosanitary regulations [FAO, 1995]

Commodity class: A category of similar commodities that can be considered together in phytosanitary regulations [FAO, 1990]

Consignment: A quantity of plants, plant products and/or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate (a consignment may be composed of one or more commodities or lots) [FAO, 1990; revised ICPM, 2001; PPA, 2007]

Country of origin: of a consignment of plants, a country where the plants were grown; of a consignment of plant products, country where the plants from which the plant products were derived were grown; of other regulated articles, country
where the regulated articles were first exposed to contamination by pests [FAO, 1990; revised CEPM, 1996; CEPM, 1999]

**Grain:** A commodity class for seeds intended for processing or consumption and not for planting (see seeds) [FAO, 1990; revised ICPM, 2001]

**Import Permit:** Official document authorizing importation of a commodity in accordance with specified phytosanitary requirements [FAO, 1990; revised FAO, 1995; ICP, 2005; PPA, 2007]

**Inspector:** Person authorized by the National Plant Protection Organization to discharge its functions [FAO, 1990; PPA, 2007]

**Inspection:** Official visual examination of plants, plant products or other regulated articles to determine if pest are present and/or to determine compliance with phytosanitary regulations [PPA 2007]

**IPPC:** International Plant Protection Convention, as deposited in 1951 with FAO in Rome and as subsequently amended [FAO, 1990; PPA, 2007]

**Intended use:** Declared purpose for which plants, plant products, or other regulated articles are imported, produced, or used. [ISPM 16, 2002]

**Interception (of a consignment):** The refusal or controlled entry of an imported consignment due to failure to comply with phytosanitary regulations [FAO, 1990; revised FAO, 1995]

**Lot:** A number of units of a single commodity, identifiable by its homogeneity of composition, origin etc., forming part of a consignment [FAO, 1990]

**National Plant Protection Organization (NPPO):** Official service established by a government to discharge the functions specified by the IPPC. This would equate to the Plant Protection Unit in Barbados [FAO, 1990; ICPM, 2001; PPA, 2007]

**Pest:** Any species, strain or biotype of plant, animal, or pathogenic agent, injurious to plants or plant products [FAO, 1990; revised FAO, 1995; IPPC, 1997; PPA, 2007]

**Phytosanitary:** Pertaining to plant quarantine


**Phytosanitary measure:** Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests [FAO, 1995; revised IPPC, 1997; ISC, 2001; PPA, 2007]

**Phytosanitary regulation:** Official rule to prevent the introduction and/or spread of quarantine pests, by regulating the production, movement, or existence of commodities or other articles, or the normal activity of persons, and by establishing schemes for phytosanitary certification [FAO, 1990; revised; FAO,
Plants: Living plant and parts thereof, including seeds [FAO, 1990; revised IPPC, 1997; PPA 2007]

Plants for planting: Plants intended to remain planted, to be planted or replanted [FAO, 1990]

Plants in vitro: A commodity class for plants growing in an aseptic medium in a closed container [FAO, 1990; revised CEPM, 1999; ICPM, 2002 formerly plants in tissue culture]

Plant product: Un-manufactured material of plant origin (including grain) and those manufactured products that, by their nature or that of their processing, may create a risk for the spread of pest.

Processed wood material: Products that are a composite of wood constructed using glue, heat and pressure, or any combination thereof. [ISPM 15, 2002]

Quarantine Pest: A pest of potential economic importance to the area endangered and not yet present there, or present but not widely distributed and being officially controlled [FAO, 1990; revised FAO, 1995; IPPC 1997; PPA, 2007]

Raw wood: Wood which has not undergone processing or treatment [ISPM 15, 2002]

Re-exported consignment: Consignment that has been imported into a country from which it is then exported. The consignment may be stored, split up, combined with other consignments or have its packaging changed (formerly country of re-export). [FAO, 1990; revised CEPM, 1996; CEPM, 1999; ICPM, 2001; ICPM, 2002]

Regulated article: Any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harboring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved [FAO, 1990; revised FAO, 1995; IPPC, 1997; PPA, 2007]

Regulated non quarantine pest: A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party [IPPC, 1997, PPA, 2007]

Regulated pest: A quarantine pest or a regulated non-quarantine pest [IPPC, 1997]


Round wood: Wood not sawn longitudinally, carrying its natural rounded surface, with or without bark. [FAO, 1990]

Sawn wood: Wood sawn longitudinally, with or without its natural rounded sur-
face, with or without bark. [FAO, 1990]

**Seed:** A commodity class for seeds for planting or intended for planting and not for consumption or processing (see grain) [FAO, 1990; revised ICPM, 2001]

**Soil:** material wholly or partially derived from the upper layer of the earth’s crust which is capable of sustaining plant life and which contains solid organic substances such as parts of a plant, humus, peat or bark, but excluding any medium which is sterile, composed entirely of unused peat or otherwise incapable of harbouring or transmitting pests [from Cap 266 Laws of Barbados] [PPA, 2007]

**Stored product:** Un-manufactured plant product intended for consumption or processing, stored in a dried form (this includes in particular grain and dried fruits and vegetables) [FAO, 1990]

**Treatment:** Officially authorized procedure for killing, removal or rendering infertile of pests [FAO, 1990, revised FAO, 1995; ISPM No. 15, 2002; ISPM No. 18, 2003; ICPM, 2005; PPA, 2007]

**Wood:** A commodity class for round wood, sawn wood, wood chips or dunnage, with or without bark [FAO, 1990; revised ICPM, 2001]

**Wood packaging material:** Wood or wood products (excluding paper products) used in supporting, protecting or carrying a commodity (includes dunnage) [ISPM 15, 2002]

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5.8 **What is Surveillance?**

The ISPM “Glossary of Phytosanitary terms” defines surveillance as ‘An official process which collects and records data on pest occurrence or absence by survey, monitoring or other procedures’.

5.8.1 **Surveillance Activities pre-WTO**

The Quarantine/Plant Protection Departments of most Caribbean Governments (with a few exceptions) generally carried out ad-hoc surveillance activities, usually in response to outbreaks of new pests. Surveillance was seldom pro-active. Surveillance activities were primarily geared towards eradication or eventual control of a specific pest and essentially had little bearing on facilitating trade. They were usually not based on scientific risk management procedures but simply on the presence or absence of specific pests in a trading partner country.

5.8.2 **Surveillance Activities post-WTO**

After 1994 and the signing of the WTO agreements, the use of scientifically established and documented risk management procedures and facilitating trade became the most important factors re. surveillance activities. Surveillance became most important in the development of PRAs as well as for providing the now mandatory documentation for establishing the presence or absence of spe-
specific pests i.e. areas of Low Pest Prevalence, Pest Free Areas, Pest Free Places of Production, Pest Free Production Sites, and Official Pest Lists.

5.8.3 Government’s specific surveillance - related responsibilities

In addition to the general responsibilities related to plant quarantines that Governments have committed themselves to under the IPPC, the following responsibilities are specifically related to surveillance:

- The issuance of certificates relating to the phytosanitary requirements of the importing contracting party for consignments of plants, plant products and other regulated articles. Such requirements may mandate that Barbados be free from a named regulated pest or that consignments be derived from plants grown from specified Pest Free areas. Barbados, therefore, has to prove that such declarations are true and believable through the provision of copious documentation by the PQU.

- The surveillance of growing plants including fields, plantations, nurseries, gardens, greenhouses, laboratories and wild flora, and plants and plant products in storage, or in transportation, with the object of reporting the occurrence, outbreak and spread of pests, and of controlling those pests.

- The protection of endangered areas and the designation, maintenance and surveillance of pest free areas and areas of low pest prevalence.

Signing the WTO and the IPPC conventions also committed Governments to the following:

- Conducting Pest Risk Analyses
- Training and developing staff
- Distributing information within the country regarding regulated pests and how to prevent and control them
- Conducting ongoing research and investigation in the field of plant protection
- Developing and issuing phytosanitary regulations
- The performance of such other functions as might be required for the implementation of the relevant convention.

5.9 General Surveillance

General surveillance is a process whereby information on particular pests which are of concern for an area is gathered from many sources, wherever it is available, and provided for use by the PQU. It is a non-specific, background, collection of pest information from a variety of sources. It includes the following:

- designation of a national repository of survey information on pests
- Record keeping and retrieval systems
There are a number of sources of information related to pest surveillance in Barbados. These sources include The Ministry of Agriculture, CARDI, UWI, the WIC-SCBS, producers, consultants, the general public, scientific and trade journals, and unpublished data and contemporary observations. In addition, the NPPO may obtain information from international or regional sources such as FAO, the Inter-American Institute for Cooperation on Agriculture (IICA), Regional Plant Protection Organizations (RPPOs), etc.

5.10.1 Collection, storage and retrieval of information
To utilize data from these sources, the Ministry should have a system whereby appropriate information on the particular pest(s) of concern is collected, verified and compiled. Components of such a system should include the following:

- the Plant Protection Unit (PPU) acting as the national repository for plant pest records
- a record keeping and retrieval system
- data verification procedures
- communication channels to transfer information between the various sources and the PPU

To ensure relevant reporting, components of such a system should include incentives such as the following:

- legislative obligations (for the general public or specific agencies)
- cooperative agreements (between the PPU and specific agencies)
- use of contact personnel to enhance communication channels to and from NPPOs
- public education/awareness programmes.

5.10.2 Use of information
Information gathered through such general surveillance is used in the following ways:

- to support declarations of pest freedom
- to aid early detection of new pests
- for reporting to other organizations such as RPPOs and FAO
- in the compilation of host and commodity pest lists and distribution records
- in pest Response
5.11 The Pest Response Process

In Barbados, like many other Anglophone Caribbean countries, plant health surveillance activities are generally emergency reactions to new pest incursions or outbreaks and are rarely proactive attempts to characterize and deal with pests that are of economic importance to the country and, indeed may not be in the country, but may constitute a threat because of the existence of various pathways for entry here.

In addition, pests of plantation type, export oriented crops often have surveillance activities set up for them, but pests of local staples or new export crops geared for ethnic markets in metropolitan countries do not. It may be prudent to develop and maintain a system for conducting routine surveillance and pest response activities for potential pests of both traditional and local staple crops.

The Pest Response system is essentially a surveillance system that relates to pests of all crops and to routine or emergency response. It comprises the following aspects:

- The institution of a general surveillance network utilizing a named officer as the person responsible for maintaining the official pest list of Barbados and for collating new pest records as they are brought to light by the various scientists collaborating in that network.
- A clear, widely circulated protocol for dealing with new pests that elaborates all activities in a transparent system that should ensure constant information flows and, thereby, does not allow possible new pests to be neglected and “fall beneath the cracks”.

5.12 Coordination of General Surveillance Activities

Coordination of general surveillance activities should be by a senior officer of the PPU who should also be responsible for the maintenance of the Official Pest List. All officers taking part in general surveillance activities would be expected to record any new pest found in the format specified in the Official Pest list.

Officers finding new or unfamiliar pests should send samples of the pests to the scientist, designated as Lead Diagnostician for the specific taxon, along with accompanying details of the circumstances surrounding the new find.

The following data elements must be provided in the data record for the new pest to ensure full compliance with the data required for later reporting under the IPPC.

- scientific name of pest
- family/order - scientific name of host and plant part affected or means of collection (e.g. attractant trap, soil sample, sweep net)
  - locality, e.g. location, addresses, GPS coordinates where available.
o date of collection and name of collector
o date of initial identification and name and affiliation of identifier
• date of verification and name and affiliation of verifier - references, if any
• additional information, e.g. nature of host-pest relationship, infestation status, growth stage of plant affected, etc.

The system should have a proper record keeping and retrieval system, data verification procedures and communication channels to transfer information from the various sources to Graeme Hall.

The system may also include incentives to report through legislative regulations, cooperative agreements (between the Ministry of Agriculture and specific agencies), and public education/awareness programmes.

The PPU/PQU should keep appropriate records derived from general surveillance and specific surveys. The information kept should be appropriate for the intended purpose, for example, support of specific pest risk analyses, establishment of pest free areas and preparation of pest lists.

Reports of pest occurrence on commodities may be specific on locality or verification, but should refer precisely to the exact type of commodity, the collector and the date, and if appropriate, the means of collection. Reports of new occurrences of pests should also include information on any measures taken and such reports made available on request.

The PPU should, on request, distribute reports of pest presence, distribution, or absence, derived from general surveillance and specific surveys. Reports should be adequately referenced in relation to pest occurrences.

5.13 Specific Surveys

Specific surveys are procedures by which NPPOs obtain information on pests of concern on specific sites in an area over a defined period of time. They are official detection, delimiting or monitoring surveys that utilize various procedures to obtain information on specific pests at specific sites over a defined period of time. The verified information acquired may be used to determine the presence or distribution of pests in an area, or on a host or commodity, or their absence from an area (in the establishment and maintenance of pest free areas).

A detection survey is one conducted in an area to determine if pests are present.
A delimiting survey is one conducted to establish the boundaries of an area considered to be infested by or free from a pest.

A monitoring survey is one established to verify the characteristics of a pest population.

Specific surveys are necessary for substantiating claims for PFAs, PRA’s, etc., or establishing the presence or absence of pests.
They should document the following:

- well documented survey plans, protocols or guidelines that define the purpose of the survey
- the target pest(s), scope, timing, commodity, host plants, etc.
- set out the statistical basis, sampling parameters, survey methodology used (needs biometrician input)
- the adequacy of diagnostic services used
- the facilities for record keeping, storage of voucher specimens, etc.
- access to facilities for verification of pest diagnoses
- the qualifications of diagnosticians
- the various communication channels

5.13.1 Some general elements of the design of a specific survey

- A comprehensive surveillance plan should be developed for each pest identified for surveillance
- Each survey should have a designated team leader responsible for the survey who would, in most cases, have designed the survey
- Detailed pest data sheets and survey methodology instructions are prepared and circulated to the team
- There is formal training of the team in the specific survey methodology for the particular pest/host
- Standardized datasets are recorded in the field
- Data is either recorded in hardcopy or directly on a Notebook Computer, Tablet or personal digital assistant (PDA)
- Data, in spreadsheet or database form format, is inputted from hardcopy onto a computer on the same day it is gathered
- Data is emailed to the Lead Survey Officer for collating and processing
- Compiled data is packaged for different users and made available to a hierarchy of users as soon as possible for information, analysis, etc.
- Specially packaged data is published on a regular basis to official websites
- General television and radio public relations programmes are developed and implemented to explain the surveys and their importance to the economy and to solicit the support of the general public.

5.14 Pest Surveys

Surveys for specific pests will provide information to be used mainly to support NPPO declarations of pest freedom but may also be used to aid early detection of
new pests and for reporting to other organizations such as RPPOs and FAO. The selection of suitable survey sites may be determined by the following:

- previously reported presence and distribution of the pest
- biology of the pest
- distribution of host plants of the pest and especially of their areas of commercial production
- climatic suitability of sites for the pest

The timing of survey procedures may be determined by the following:

- the life cycle of the pest
- the life cycle changes of the pest and its hosts
- the timing of pest management programmes
- whether the pest is best detected on crops in active growth or in the harvested crop

For pests which are only likely to be present as a result of a recent introduction, the selection of suitable survey sites may relate, for example, to points of possible entry, possible pathways of spread, sites where imported commodities are marketed, and sites where imported commodities are used as planting material.

The selection of survey procedures may be determined by the type of sign or symptom by which the pest can be recognized and by the accuracy or sensitivity of techniques used to test for the pest.

### 5.15 Commodity or Host Surveys

Specific commodity surveys can provide useful information for pest lists related to commodities produced under specific cultural practices. Surveys could also be used for the preparation of host pest lists where data from general surveillance is lacking.

The selection of suitable survey sites may be determined by the following:

- geographical distribution of production areas and/or their size
- pest management programmes (commercial and non-commercial sites)
- cultivars present
- points of consolidation of the harvested commodity

Survey procedures will be timed in relation to crop harvesting and will depend on the selection of a sampling technique appropriate to the type of harvested commodity.

### 5.16 Targeted and Random Sampling

Surveys should normally be designed to favour the detection of the specific pests
concerned. However, the survey plan should also include some random sampling to detect unexpected events. It should be noted that if a quantitative indication of the prevalence of a pest in an area is required, the results from targeted surveys will be biased and may not provide an accurate assessment.

5.17 Good Surveillance Practice

Personnel involved in general surveillance should be adequately trained in appropriate fields of plant protection and data management. Personnel involved in surveys should be adequately trained, and where appropriate audited, in sampling methods, preservation and transportation of samples for identification and record keeping associated with samples. Appropriate equipment and supplies should be used and maintained adequately. The methodology used should be technically and scientifically valid.

5.18 Technical requirements for Diagnostic Services

The PPU should provide appropriate diagnostic services to support general surveillance and specific survey activities or ensure access to such services. Verification of diagnoses by other recognized authorities will provide increased confidence in the survey results. Characteristics of the diagnostic services include the following:

- expertise in disciplines relevant to pest (and host) identification
- adequate facilities and equipment
- access to specialists for verification where necessary
- facilities for record keeping
- facilities for processing and storing specimens
- use of standard operating procedures, where appropriate and available

5.19 Record Keeping

The NPPO should keep appropriate records derived from general surveillance and specific surveys. Information kept should be appropriate for the intended purpose, for example, support of specific pest risk analyses, establishment of pest free areas and preparation of pest lists. Voucher specimens should be deposited, where appropriate. The type of information, as noted below, should be in the records:

- scientific name of pest
- family/order
- scientific name of host, plant part affected or means of collection (e.g. attractant trap, soil sample, sweep net)
• locality, e.g. location codes, addresses, coordinates
• date of collection and name of collector
• date of identification and name of identifier
• date of verification and name of verifier
• references, if any
• additional information, e.g. nature of host – pest relationship, infestation status, growth stage of plant affected or found only in greenhouses.

Reports of pest occurrence on commodities should refer precisely to the exact type of commodity, the collector and the date, and if appropriate, the means of collection. Reports of new occurrences of pests should also include information on any measures taken and such reports made available on request.

### 5.20 Transparency

The NPPO should on request, distribute reports of pest presence, distribution, or absence derived from general surveillance and specific surveys. Reports should be adequately referenced in relation to pest occurrences.

#### 5.20.1 Checklist of items to be covered in Survey Plans

The specific survey plan should provide details on the following areas:

- A list of the sites selected for the surveys by the Survey Leader and Lead Scientist
- A clear identification of the individuals who would be carrying out the survey in the field
- Information on the period of time during which the surveys would be carried out, including the best time of day for conducting the surveys
- Written instructions, along with pictures, on how to identify the pests being surveyed and how to distinguish them from other similar pests
- A list of plants, plant products and other articles that are expected to be hosts of the pest and which should be examined
- Information on growers, growers associations and other entities in the area that can assist in the survey
- Information on any areas that should be avoided in conducting the surveys
- Specifications for Public Relation programmes to apprise the persons in the area that the survey will be held and when they should expect visits from the surveyors
- Details of the sampling methodology for the survey
- Detailed Instructions on the exact manner in which the survey must be carried out in the field
• If eradication is involved, clear instructions on the procedure for such eradication including how to approach farmers on this sensitive matter
• Information on the laws under which the surveys are being conducted
• Information on work flows and work schedules for the survey
• Forms for completing information on the survey and for creating summary information for the daily work scheduling
• List of required equipment and supplies
• Specifications on responsibilities for completing forms and recording data as these forms might be subject to inspection by trading partners at a later date
• Information on proper collection of specimens and how these specimens are to be preserved and sent on to the local diagnostician
• Information on any compensation to be given growers
• Full budget and costing of all activities involved in the surveillance activities

5.20.2 Outline of Dossier on Potential Quarantine Pest

The dossier on a potential pest problem that is assembled by the Lead Scientist is very detailed. The data is assembled from Internet sources, exchange of information with regional and international colleagues, text books, etc. The dossier should be developed as expeditiously as possible in relation to the urgency of the pest response situation. The data should contain information on all the headings below:

• The Common Name of the pest
• The Scientific Name of the pest
• Biology of the pest; dispersal, invasiveness, number of hosts, etc.
• The Scientist and Agency which confirmed the diagnosis (or to which the samples were sent)
• Details of First Report
• Crops affected
• Size of affected area
• Speculations on how pest might have reached area and its origin
• Pictures of the pest
• Pictures of pest damage
• Information on effects of the pest in other countries
• How pest is controlled elsewhere and history of effectiveness of control in other countries
• Economic importance of pest elsewhere
• Information on known worldwide distribution of the pest
• Potential costs to the economy if pest becomes established: financial and social
• Probability of eradication
• Estimated costs of eradication
• Estimated costs for surveys, quarantine activities, research and extension
• Estimated costs for export treatments to control pest and to satisfy trading partners
• List of publications on the pest

This information is provided in a summary, yet comprehensive format that allows the Coordinator of the PPU to quickly assess the relative importance of the pest to apprise the Management of the Ministry of the seriousness of the situation and, therefore, to mobilize funds and other resources to properly implement the surveillance and pest response activities.

5.20.3 Functions of the Survey Leader

The Survey Leader is a subject matter specialist in the area of Plant Health who, in the event of a Plant Health emergency that necessitates specific surveillance and perhaps eradication and containment measures to be urgently taken, would be allowed to spend his full time on these matters. This full time concentration on pest response matters would normally be expected to be a matter of weeks rather than months. The Survey Leader would be responsible for the following:

• Reporting to the PPU Coordinator during the period of the emergency actions on a regular basis
• Implementing the pest response activities
• Developing the detailed operational plan for conducting the surveys and other activities including the necessary operational forms and field worksheets
• Liaising with the Plant Quarantine Division as well as the PPU for any assistance/advice required
• Developing the overall survey plans as well as any eradication and/or containment plans in collaboration with the Lead Scientist and oversight by the PPU Coordinator
• Using an operational centre approved by the PPU Coordinator.
• In collaboration with Extension staff, ensuring that survey equipment is available as required
• Sourcing and acquiring all materials necessary for conducting the operations involved in the Pest Response project.
• Training and briefing the officers/workers implementing the surveys/eradication/containment measures
• Ensuring that all forms are properly completed by implementing a system of
quality control at the field level as well as at the data processing level

- Ensuring that data is provided to the relevant personnel in a timely fashion, thereby, ensuring that decisions can be taken as soon as possible on any modifications to the plan based on findings in the field

- Liaising with the Accounts section of the Ministry to ensure that funds are available for all aspects of the project on a timely basis. This includes compensation for workers, as well as payment to suppliers for various materials used in the project

It is expected that the Survey Leader will be provided with operational assistance by the Extension Department. Some of the above activities may, therefore, be carried out by Extension Officers.
### Appendix 1 - Phytosanitary Import Permit Request

#### PLANT QUARANTINE UNIT BARBADOS

**PHYTOSANITARY IMPORT PERMIT REQUEST**

**DATE:**

<table>
<thead>
<tr>
<th>DESCRIPTION OF OPERATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGISTRATION NO.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMPORTER NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPORTER ADDRESS</td>
</tr>
</tbody>
</table>

| IMPORTER PHONE # |
| IMPORTER FAX # |
| IMPORTER E-MAIL |
| EXPORTER NAME AND ADDRESS |

| PORT OF ENTRY |
| PLANT PART: |
| TYPE OF USE: SINGLE | MULTIPLE |
| TRANSGENIC ORIGIN | YES | NO |
| COUNTRY OF ORIGIN |

<table>
<thead>
<tr>
<th>COMMODITY DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMON NAME</td>
</tr>
</tbody>
</table>

| INTENDED USE: |
| CONSUMPTION/TRANSFORMATION |
| PROPAGATION/REPRODUCTION |
6.2 Appendix 2 – Phytosanitary Import Permit Applications Register

PLANT QUARANTINE UNIT BARBADOS
PHYTOSANITARY IMPORT PERMIT APPLICATIONS REGISTER

REGISTER PQ

<table>
<thead>
<tr>
<th>DATE</th>
<th>APPLICATION NO.</th>
<th>PRODUCT CODE</th>
<th>ORIGIN CODE</th>
<th>RECEIPT NO.</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Note: Status: approved, rejected, in study.
### 6.3 Appendix 3 – Application for Import Inspection

**BARBADOS PLANT QUARANTINE UNIT**

**Application for Import Inspection**

**FORM PQ 003/2010**

<table>
<thead>
<tr>
<th>IMPORTER NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPORTER ADDRESS</td>
</tr>
<tr>
<td>IMPORTER PHONE</td>
</tr>
<tr>
<td>IMPORTER FAX</td>
</tr>
<tr>
<td>IMPORTER E-MAIL</td>
</tr>
</tbody>
</table>

**CONSIGNMENT DESCRIPTION**

Country of Origin

**REMARKS:**

<table>
<thead>
<tr>
<th>IMPORT PERMIT NUMBER</th>
</tr>
</thead>
</table>

**CROP COMMODITY DESCRIPTION**

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>QUANTITY (UNITS)</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**INTENDED USE**

<table>
<thead>
<tr>
<th>CONSUMPTION/TRANSFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROPAGATION/REPRODUCTION</td>
</tr>
</tbody>
</table>

**TRANSGENIC ORIGIN**

- YES
- NO

**LOCATION OF GOODS FOR INSPECTION**

**DATE AND TIME REQUESTED FOR INSPECTION**

**MEANS OF CONVEYANCE**
6.4 Appendix 4 – Commodities Inspection Form

**IMPORT INSPECTION RECORD**

<table>
<thead>
<tr>
<th>Name of Inspector:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of company:</td>
<td></td>
</tr>
<tr>
<td>Vessel:</td>
<td></td>
</tr>
<tr>
<td>Container No(s):</td>
<td></td>
</tr>
<tr>
<td>Country Of Origin:</td>
<td></td>
</tr>
<tr>
<td>Site of Inspection:</td>
<td></td>
</tr>
<tr>
<td>Date of Arrival:</td>
<td></td>
</tr>
<tr>
<td>Phyto Cert. No(0):</td>
<td></td>
</tr>
<tr>
<td>Date of Inspection:</td>
<td></td>
</tr>
<tr>
<td>Fumigation Cert.</td>
<td></td>
</tr>
<tr>
<td>Release Cert. No.</td>
<td></td>
</tr>
</tbody>
</table>

Material inspected:

<table>
<thead>
<tr>
<th>Commodity</th>
<th>No of Pkgs</th>
<th>Weight (kg)</th>
<th>No of Samples Taken</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
</tr>
</tbody>
</table>

Comments/Recommendations:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Signature of Inspecting Officer(s): ___________________________ / ___________________________

Signature of Group Coordinator: ___________________________
### Appendix 5 – Phytosanitary Detention Form

**BARBADOS PLANT QUARANTINE UNIT**

**Phytosanitary Detention Form**

<table>
<thead>
<tr>
<th>FORM PQ 004/2010</th>
<th>DATE:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IMPORTER NAME</strong></td>
<td></td>
</tr>
<tr>
<td><strong>IMPORTER ADDRESS</strong></td>
<td></td>
</tr>
<tr>
<td><strong>IMPORTER PHONE &amp; FAX</strong></td>
<td></td>
</tr>
<tr>
<td><strong>IMPORTER E-MAIL</strong></td>
<td></td>
</tr>
<tr>
<td><strong>EXPORTER NAME AND ADDRESS</strong></td>
<td></td>
</tr>
<tr>
<td><strong>LOCATION, DATE and TIME of INSPECTION</strong></td>
<td></td>
</tr>
<tr>
<td><strong>DESCRIPTION OF COMMODITY</strong></td>
<td></td>
</tr>
<tr>
<td><strong>COMMON NAME</strong></td>
<td></td>
</tr>
<tr>
<td><strong>SCIENTIFIC NAME</strong></td>
<td></td>
</tr>
<tr>
<td><strong>VARIETY</strong></td>
<td></td>
</tr>
<tr>
<td><strong>INTENDED USE</strong></td>
<td>CONSUMPTION/TRANSFORMATION</td>
</tr>
<tr>
<td><strong>PROPAGATION/REPRODUCTION</strong></td>
<td></td>
</tr>
<tr>
<td><strong>PLANT PART</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TRANSGENIC ORIGIN</strong></td>
<td>YES</td>
</tr>
<tr>
<td><strong>PORT OF ENTRY</strong></td>
<td></td>
</tr>
<tr>
<td><strong>MEANS OF CONVEYANCE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>CONTAINER/AIRWAY BILL NUMBER</strong></td>
<td></td>
</tr>
<tr>
<td><strong>QUANTITY</strong></td>
<td>UNITS</td>
</tr>
<tr>
<td><strong>Country of Origin</strong></td>
<td></td>
</tr>
<tr>
<td><strong>REASON FOR DETENTION</strong></td>
<td></td>
</tr>
<tr>
<td>Incomplete Documentation</td>
<td>YES</td>
</tr>
<tr>
<td>Action Taken: Awaiting additional documents from Importer to be re-exported</td>
<td></td>
</tr>
<tr>
<td>Action Taken: Awaiting additional documents from Importer to be destroyed</td>
<td></td>
</tr>
<tr>
<td>Signs of infestation</td>
<td>YES</td>
</tr>
<tr>
<td>Action Taken: Samples taken and sent to lab to be re-exported</td>
<td></td>
</tr>
<tr>
<td>Action Taken: Samples taken and sent to lab to be destroyed</td>
<td></td>
</tr>
<tr>
<td>Action Taken: Samples taken and sent to lab to be treated</td>
<td></td>
</tr>
<tr>
<td><strong>COMMENTS:</strong></td>
<td></td>
</tr>
</tbody>
</table>
**SHIP INSPECTION FORM**

FORM PQ 006/2010

NO:....................

PLANT QUARANTINE UNIT BARBADOS

PLANT PROTECTION ACT xxxx

REGULATIONS.....................

**Plant Quarantine Officer:**

<table>
<thead>
<tr>
<th>Place:</th>
<th>Date:</th>
<th>Time:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ship name</th>
<th>Travel No.</th>
<th>Nationality:</th>
<th>Last port:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Shipping Agency:</th>
<th>Permanence in port:</th>
<th>Type of cargo:</th>
<th>Next port:</th>
</tr>
</thead>
</table>

**Prohibited and Restricted Products**

<table>
<thead>
<tr>
<th>Product:</th>
<th>Location:</th>
<th>Origin:</th>
<th>Seal and Quarantine Disposition:</th>
</tr>
</thead>
</table>

**Condition of the waste deposits**

<table>
<thead>
<tr>
<th>Closed</th>
<th>Leaky</th>
<th>Outdoors</th>
</tr>
</thead>
<tbody>
<tr>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inspected Areas:</th>
<th>Plant/Plant product/by-product aboard:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chilling rooms</td>
<td>yes ( ) no ( )</td>
</tr>
<tr>
<td>Dry rooms</td>
<td>Species ____________________________</td>
</tr>
<tr>
<td>Warehouse</td>
<td>Quantity ____________________________</td>
</tr>
<tr>
<td></td>
<td>Certificate _________________________</td>
</tr>
</tbody>
</table>

**Does the ship have a functioning incinerator?**

Yes ( ) No ( )

Phytosanitary Warning: In accordance with the laws of Barbados, in the sojourn of this shipment within the territorial limits of Barbados, no member of the crew or any other person may remove any seals placed on quarantined products and may not take out of the ship without the expressed authorization from a Plant Quarantine/Produce Inspector any plant, plant product or by product. All organic waste must remain aboard the ship in sealed containers.

**Observations and comments:**

__________________________  __________________________  __________________________
Captain/Provision Master  Shipping Agency  Plant Quarantine Inspectors
### Appendix 7 - Non-Compliance Form

<table>
<thead>
<tr>
<th>1. NNPO OFFICE</th>
<th>2. DATE ISSUED</th>
<th>3. REFERENCE NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barbados Government Ministry of Agriculture</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NON-COMPLIANCE ACTION NOTIFICATION**

<table>
<thead>
<tr>
<th>4. DESCRIPTION OF NON-COMPLIANCE</th>
<th>5. TO</th>
<th>6. DATE INTERCEPTED</th>
<th>7. NAME OF PEST/DISEASE</th>
<th>8. LOCATION OF THE PEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ DOCUMENTATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ PEST/DISEASE INTERCEPTION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ DETECTION OF OTHER REGULATED ARTICLES; TRASH; SOIL; WEED; SEED</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ ISPM 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ BARK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Treatment failure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. IMPORTER/CONSIGNEE DETAILS (name and address)</th>
<th>10. DESCRIPTION AND QUANTITY OF COMMODITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. IDENTIFYING MARK OR NUMBERS (CONTAINER NO, B/L NO etc)

<table>
<thead>
<tr>
<th>12. PORT OF ENTRY</th>
<th>13. DATE OF ARRIVAL</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. EXPORTER/CONSIGNOR DETAIL (name and address)</th>
<th>15. COUNTRY OF ORIGIN</th>
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<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>16. NAME OF CARRIER/SHIPPER</th>
<th>17. PORT OF LOADING</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>18. DOCUMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYTOSANITARY CERTIFICATE NO</td>
</tr>
<tr>
<td>PHOTOSANITARY CERTIFICATE NO</td>
</tr>
<tr>
<td>PLACE ISSUED</td>
</tr>
</tbody>
</table>

19. ACTION TAKEN BY PLANT PROTECTION SERVICES BARBADOS (treatment/concentration/date)

<table>
<thead>
<tr>
<th>20. REPORTING OFFICER</th>
<th>21. Signature</th>
<th>22. Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
6.8 Appendix 8 – Model Phytosanitary Certificate

Model Phytosanitary Certificate

No. ______
Plant Protection Organization of ________________________________________________________________
TO: Plant Protection Organization(s) of _____________________________________________________________

I. Description of Consignment
   Name and address of exporter: _________________________________________________________________
   Declared name and address of consignee: _________________________________________________________
   Number and description of packages: ____________________________________________________________
   Distinguishing marks: __________________________________________________________________________
   Place of origin: _________________________________________________________________________________
   Declared means of conveyance: _________________________________________________________________
   Declared point of entry: ________________________________________________________________________
   Name of produce and quantity declared: __________________________________________________________
   Botanical name of plants: __________________________________________________________________________

This is to certify that the plants, plant products or other regulated articles described herein have been inspected and/or tested according to appropriate official procedures and are considered to be free from the quarantine pests specified by the importing contracting party and to conform with the current phytosanitary requirements of the importing contracting party, including those for regulated non-quarantine pests.

They are deemed to be practically free from other pests.*

II. Additional Declaration

III. Disinfestations and/or Disinfection Treatment
   Date _____ Treatment ______ Chemical (active ingredient)____________________________________________
   Duration and temperature ______________________________________________________________________
   Concentration _________________________________________________________________________________
   Additional information __________________________________________________________________________
   _____________________________________________________________________________________________
   Place of issue __________________________________________________________________________________

(Stamp of Organization) Name of authorized officer ______________

Date _______ (Signature)____________________________

No financial liability with respect to this certificate shall attach to (name of Plant Protection Organization) or to any of its officers or representatives.*

* Optional clause
6.9 Appendix 9 – Model Phytosanitary Certificate for Re-Export

Model Phytosanitary Certificate for Re-Export

No. _______
Plant Protection Organization of ___________________________ (contracting party of re-export)
TO: Plant Protection Organization(s) of ________________________ (contracting party(ies) of import)

I. Description of Consignment
Name and address of exporter: _____________________________________________________________________
Declared name and address of consignee: _____________________________________________________________________
Number and description of packages: _____________________________________________________________________
Distinguishing marks: _______________________________________________________________________________
Place of origin: _______________________________________________________________________________________
Declared means of conveyance: _____________________________________________________________________
Declared point of entry: ______________________________________________________________________________
Name of produce and quantity declared: _____________________________________________________________________
Botanical name of plants: ___________________________________________________________________________

This is to certify that the plants, plant products or other regulated articles described above____________ were imported into (contracting party of re-export) ______________ from ______________ (contracting party of origin) covered by Phytosanitary certificate No. __________
*original ☐ ☐ certified true copy ☐ ☐ of which is attached to this certificate; that they are packed ☐ repacked ☐ in original ☐ ☐*new ☐ ☐ containers, that based on the original phytosanitary certificate ☐ ☐ and additional inspection ☐ ☐, they are considered to conform with the current phytosanitary requirements of the importing contracting party, and that during storage in __________________ (contracting party of re-export), the consignment has not been subjected to the risk of infestation or infection.

II. Additional Declaration

III. Disinfestation and/or Disinfection Treatment
Date ___________ Treatment ___________ Chemical (active ingredient) ______________________________
Duration and temperature __________________________________________________________________________
Concentration _______________________________________________________________________________________
Additional information _____________________________________________________________

Place of issue _______________________________________________________________________________________
(Stamp of Organization) Name of authorized officer ________________________________
Date ________ (Signature)___________________________________________

No financial liability with respect to this certificate shall attach to ________ (name of Plant Protection Organization) or to any of its officers or representatives.**

** Optional clause
6.10 Appendix 10 – Flowchart of Inspection Activities re: Export Certification

Receive application to certify a plant, plant product or other regulated article

Determine import requirements for the products

Determine if the regulated article can be certified

Perform inspection

Inspection results OK?

No

Refuse Certificate

Yes

Issue Certificate
6.11 Appendix 11 - Phytosanitary Requirements determination checklist

**Table 9-1: Are the plants or plant products prohibited, restricted by the importing country, or restricted by Barbados?**

<table>
<thead>
<tr>
<th>If a plant or plant product is</th>
<th>Then</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prohibited by the country</td>
<td>Go to Table 2, and check if the exporter has an import permit (IP) or other special authorization for the shipment from the plant protection service of the foreign country.</td>
</tr>
<tr>
<td>Not prohibited by the country</td>
<td>Go to Table 3, and continue to look for import requirements that apply to the plants or plant products.</td>
</tr>
<tr>
<td>Restricted by Barbados (Table A)</td>
<td>Go to Table 2</td>
</tr>
</tbody>
</table>

1. **Do the plants or plant products require an import permit (IP)?**

An IP is issued to the importer in the foreign country—not to the exporter. If the exporter has a copy of the permit, the exporter must have received it from the importer. If necessary, the permit should be translated from the original language and notarized as a true translation.

Use Table 2 to determine your action if the exporter has an Import Permit (IP) or other special authorization for shipment from the Plant protection service of the foreign country.
Table 9-2: Regulating Prohibited or Restricted Plants or Plant Products with Import Permit (IP) Requirements

<table>
<thead>
<tr>
<th>If the exporter has:</th>
<th>Then</th>
</tr>
</thead>
<tbody>
<tr>
<td>An IP or another special</td>
<td>1. REVIEW the document for requirements that must be met by the exporter</td>
</tr>
<tr>
<td>authorization</td>
<td>2. GO to the inspection guidelines</td>
</tr>
<tr>
<td></td>
<td>3. INSPECT the plants or plant products to make sure the exporter has met the requirements listed on the document</td>
</tr>
<tr>
<td></td>
<td>4. ENTER an additional declaration (AD) on the PC that an IP was presented (include the number of the IP)</td>
</tr>
<tr>
<td>No IP or another special</td>
<td>1. REFUSE to issue a PC</td>
</tr>
<tr>
<td>authorization</td>
<td>2. INFORM the exporter that the plants or plant products are prohibited by the country or restricted by Barbados and must have an IP to be certified—the exporter must get an IP from the foreign Importer or special authorization from the relevant authority.</td>
</tr>
</tbody>
</table>

2. Are the plants or plant products conditionally prohibited from specific areas that are infested with a pest usually associated with the host?
Table 9-3: Regulating Plants or Plant Products Conditionally Prohibited From Specific Areas That Are Infested With a Pest Usually Associated With the Host

If the plants or plant products are: and after reviewing supporting documents, you determine that the plants or plant products were grown in: then:

| Prohibited from specific areas that are infested with a pest usually associated with that host | One of the specified areas | REFUSE to issue a PC |
| An area free from pests associated with that host (A Pest-Free Area) | GO to Table 4 |

Not prohibited from specific areas

4. Do the plants or plant products require a growing season inspection?

Table 9-4: Regulating Plants or Plant Products That Require a Growing Season Inspection.

If the plants or plant products: and after reviewing the supporting documents, you determine that a growing season inspection was: then:

| Require a growing season inspection | Not satisfactorily conducted | REFUSE to issue an PC |
| Satisfactorily conducted | GO to Table 5 to check for other import requirements that may pertain to the plants or plant products being exported |

| Do not require a growing season inspection | | |
5. **Is there a specific time during the year when the plants or plant products are permitted to enter the foreign country?**

<table>
<thead>
<tr>
<th>If information is available that indicates that</th>
<th>and after reviewing the supporting documents, you determine that the plants or plant products:</th>
<th>then</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will Not arrive during the specified time</td>
<td>REFUSE to issue a PC</td>
<td></td>
</tr>
</tbody>
</table>

| There is a specific time when the plants or plant products are enterable | Arrived during the specified time | Go to Table 6 |

| Does not list specific times for entry | |

6. **Do the plants or plant products require treatment in the country of origin as a condition of entry?** *(Table 9-6)*
Table 9-6: Regulating Plants or Plant Products That may or may not require Treatment in the Country of Origin as a Condition of Entry

<table>
<thead>
<tr>
<th>After reviewing supporting documents, you determine that:</th>
<th>and you find that</th>
<th>and the exporter is:</th>
<th>then:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Treatment is required by the Importing country</td>
<td>A treatment acceptable to the importing country was conducted under official supervision</td>
<td>NOTE: Details of all acceptable treatments are to be recorded on the PC</td>
<td>GO to Table 7</td>
</tr>
<tr>
<td>No treatment was conducted or treatment was unacceptable to the importing country</td>
<td>Not willing to arrange for proper treatment</td>
<td>REFUSE to issue a PC</td>
<td></td>
</tr>
<tr>
<td>No Treatment required by the importing country</td>
<td>An acceptable treatment was conducted under official supervision</td>
<td>NOTE: Details of all acceptable treatments are to be recorded on the PC</td>
<td>GO to Table 7</td>
</tr>
<tr>
<td>No treatment was conducted or treatment was unacceptable</td>
<td>Wants the shipment treated</td>
<td>1. SUPERVISE treatment NOTE: Details of all acceptable treatments are to be recorded on the PC</td>
<td>1. GO to Table 7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>GO to Table 7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Does not want the shipment treated</td>
</tr>
</tbody>
</table>
8. Do the plants or plant products need to conform to an additional declaration (AD) or an official verification (OV)? Go to table 9-7

### Table 9-7: Regulating Plants or Plant Products That Must Comply With an Additional Declaration (AD) or an Official Verification (OV)

<table>
<thead>
<tr>
<th>If the plants or plant products: and after reviewing the supporting documents or inspecting the plants or plant products, you determine that</th>
<th>Then</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need to conform to an AD</td>
<td>The plants or plant products meet all requirements and conditions specified by the AD</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> An AD is to be recorded on the PC</td>
</tr>
<tr>
<td></td>
<td>GO to Table 8</td>
</tr>
<tr>
<td>Need to conform to an OV</td>
<td>There is no clear evidence that the plants or plant products meet all requirements and conditions specified</td>
</tr>
<tr>
<td></td>
<td>DETERMINE if the condition can be met, e.g., treatment</td>
</tr>
<tr>
<td></td>
<td><strong>If it can be met,</strong></td>
</tr>
<tr>
<td></td>
<td>1. ALLOW exporter to provide evidence of freedom from pests</td>
</tr>
<tr>
<td></td>
<td>2. INSPECT the plants or plant products after the exporter has provided the evidence</td>
</tr>
<tr>
<td></td>
<td>3. GO to Table 8</td>
</tr>
<tr>
<td></td>
<td><strong>If it cannot be met,</strong></td>
</tr>
<tr>
<td></td>
<td>REFUSE to issue a PC</td>
</tr>
<tr>
<td>Does not need to conform to an AD or OV</td>
<td>The plants or plant products meet all requirements and conditions specified by the OV</td>
</tr>
<tr>
<td></td>
<td>GO to Table 8</td>
</tr>
<tr>
<td>Need to conform to freedom from applicable quarantine pests or within the tolerances for Regulated non quarantine pests</td>
<td>There is clear evidence (e.g. lab tests or field inspection results) that the plants or plant products are free or within the tolerances of applicable regulated pests</td>
</tr>
<tr>
<td></td>
<td>DETERMINE if the freedom or the tolerances can be met</td>
</tr>
<tr>
<td></td>
<td><strong>If it can be met,</strong></td>
</tr>
<tr>
<td></td>
<td>1. ALLOW exporter to provide evidence of freedom from pests</td>
</tr>
<tr>
<td></td>
<td>2. INSPECT the plants or plant products after the exporter has provided the evidence</td>
</tr>
<tr>
<td></td>
<td>3. GO to Table 9</td>
</tr>
<tr>
<td>Need to conform to freedom from applicable quarantine pests or within the tolerances for Regulated non quarantine pests</td>
<td>There is no clear evidence that the plants or plant products meet freedom from applicable pests</td>
</tr>
</tbody>
</table>
8. Does the foreign country limit the import of plants or plant products to specified ports? Go to table 9-8

**Table 9-8: Regulating Plants or Plant Products That Are Limited to Enter Ports Specified by the Foreign Country.**

<table>
<thead>
<tr>
<th>If there is:</th>
<th>and after reviewing supporting documents or inspecting the plants or plant products, you determine that the:</th>
<th>then:</th>
</tr>
</thead>
<tbody>
<tr>
<td>An import requirement</td>
<td>Requirement was met</td>
<td>GO to Inspection procedures</td>
</tr>
<tr>
<td></td>
<td>Plants or plant products do not meet the requirements</td>
<td>DETERMINE if the condition is correctable, e.g., treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>If it is correctable,</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. ALLOW the exporter to meet the requirement or condition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. INSPECT the plants or plant products <em>after</em> the exporter has met the requirement</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>If it is not correctable,</em> REFUSE to issue an PC</td>
</tr>
<tr>
<td>No import requirement</td>
<td></td>
<td>1. GO to Inspection procedures</td>
</tr>
</tbody>
</table>

9. Are there other import requirements of a phytosanitary nature that the plants or plant products must meet as a condition of entry?

**Table 9-9: Regulating Plants or Plant Products That Must Meet Phytosanitary Requirements as a Condition of Entry.**

<table>
<thead>
<tr>
<th>If there is:</th>
<th>and after reviewing supporting documents or inspecting the plants or plant products, you determine that the:</th>
<th>then:</th>
</tr>
</thead>
<tbody>
<tr>
<td>An import requirement</td>
<td>Requirement was met</td>
<td>GO to Inspection procedures</td>
</tr>
<tr>
<td></td>
<td>Plants or plant products do not meet the requirement</td>
<td>DETERMINE if the condition is correctable, e.g., treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>If it is correctable,</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. ALLOW the exporter to meet the requirement or condition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. INSPECT the plants or plant products <em>after</em> the exporter has met the requirement</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>If it is not correctable,</em> REFUSE to issue an PC</td>
</tr>
<tr>
<td>No import requirement</td>
<td></td>
<td>1. GO to Inspection procedures</td>
</tr>
</tbody>
</table>
### Export Appointment Application Form

**PLANT QUARANTINE UNIT - BARBADOS**

Export Appointment Application Form

<table>
<thead>
<tr>
<th>FORM PQ 005//2010</th>
<th>DATE:</th>
</tr>
</thead>
</table>

**DESCRIPTION OF OPERATOR**

- **EXPORTER'S NAME**
- **EXPORTER'S ADDRESS**
- **EXPORTER'S PHONE & FAX #**
- **EXPORTER'S E-MAIL**
- **COUNTRY OF DESTINATION:**

**FLIGHT INFORMATION:**

<table>
<thead>
<tr>
<th>DEPARTURE TIME:</th>
</tr>
</thead>
</table>

**CROP COMMODITY DESCRIPTION**

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>QUANTITY (UNITS)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>INTENDED USE</th>
<th>CONSUMPTION/TRANSFORMATION</th>
<th>PROPAGATION/REPRODUCTION</th>
</tr>
</thead>
</table>

**PORT OF ENTRY**

**MEANS OF CONVEYANCE**

**CONSIGNMENT DESCRIPTION**

<table>
<thead>
<tr>
<th>WHERE GROWN - PARISH:</th>
<th>DISTRICT:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DATE AND TIME OF INSPECTION</th>
</tr>
</thead>
</table>

Inspection at Exporter’s Premises is Required

- **Yes**
- **No**

**REMARKS:**

**SUBMIT IMPORT PERMIT IF APPLICABLE**
6.13 Appendix 13 – General Packing House Requirements for Agricultural Products

Structural Requirements
- Building must be separate from a dwelling house and of sound construction
- Floor space should be a minimum of 1000 sq. ft.
- Floor must be of concrete to facilitate washing after packing
- Wall surface should be smooth and painted with light colour paint
- Building should have adequate lighting and electricity
- Building should be constructed to facilitate adequate ventilation
- Building should have proper roof and eves
- Building should be screened off to protect against entry of insects, birds, rodents, and other vermin or anything likely to contaminate the produce e.g. window screen

Drainage
- There should be adequate internal drainage
- Adequate external drainage to prevent backflow of water in operating area
- Charcoal pit to facilitate disposal of chemical waste (recommended)

Operational Requirements
Below are the required fixtures and equipment for an efficient packing house operation:
- Washing facilities: can be of plastic, metal or concrete
- Drying racks for curing fresh produce (slotted floor preferable wood)
- Tables for sorting and grading (stainless steel recommended)
- Treatment/dip tank for treating fresh produce (plastic, rubber or concrete)
- Pallets, stools, knives, brushes, mops, brooms, sponges and liquid soap, shovel, scales, tables,
- Potable water
- Adequate space for loading and unloading produce
Storage Requirements
- Suitable storage for boxes, tape, staples, sawdust, chemicals
- Adequate storage for finished product

Personnel Facilities
- Staff bathroom and hand wash station, and First Aid kit
- Changing room, rest room and lunch room
- Office and access to telephone

Sanitation Requirements
- Waste disposal facilities: bins, skips etc
- Clean external environment free from any other activities that could be considered incompatible with the handling of fresh produce
- Interior operational area and personnel facilities hygienic
### 6.14 Appendix 14 – Packing House Checklist Form

**PLANT QUARANTINE UNIT**  
**PACKING HOUSE CHECKLIST FORM**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Rating</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GOOD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FAIR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INADEQUATE</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### STRUCTURAL REQUIREMENTS
- Building structure
- Roof & adequate eve
- Ventilation
- Electricity
- Floor surface (concrete)
- Wall surface
- Drains (Internal)
- Screens (windows, doors etc)
- Drains (External)

#### STORAGE
- Boxes, Tape, staple etc
- Sawdust, coir dust, etc
- Chemicals
- Finished product

#### OPERATIONS AREA
- Space lay-out / operations flow:
  - Off-loading
  - Checking and Selection
  - Cleaning/Washing
  - Treatment
  - Drying
  - Grading
  - Packing
  - Holding
  - Dispatch

---

**PLANT QUARANTINE PROCEDURES MANUAL**

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**PLANT QUARANTINE PROCEDURES MANUAL**
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Rating</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation Area: Equipment, Tools &amp; Materials etc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washing Facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dip Tank (plastic, rubber or concrete)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drying Rocks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pallets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tables and bins or trays</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brushes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mops, brooms, liquid soap, sponge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shovel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potable Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PESTICIDE USE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aprons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gloves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mask and goggles (respirator)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber boots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring cylinders/cup</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spoon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERSONNEL FACILITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathroom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand wash station</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunch Room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changing Room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rest Room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Aid Kit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SANITATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste disposal facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>External</td>
<td></td>
<td></td>
</tr>
<tr>
<td>External drainage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charcoal pit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Observation / General Remarks:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Exporter’s signature ___________________________ Date ____________________________
SOVEREIGNTY

Under Article (2) of the World Trade Organisation’s Agreement on the Application of Sanitary and Phytosanitary Measures (SPS), Barbados as an independent member country has a sovereign and inalienable right to make and implement laws to protect its plant resources from the depredations of pests and disease.

The New Revised Text (NRT) of the International Plant Protection Convention (IPPC) of the Food and Agricultural Organization (FAO) in Articles IV, VI and VII also gives Barbados the right to make regulations to stop or retard the introduction and spread of exotic pests, diseases and weeds.

AUTHORITY AND ADMINISTRATION

The Laws of Barbados provide for the import and export of plants, plant products and other restricted articles. These laws have been enacted and implemented to prevent the introduction and spread of harmful, exotic pests, diseases and weeds into the country. The powers to regulate trade in plants, plant products and other restricted articles are contained in, *inter alia*, the following Acts:

- Plant Protection Act 2007
- Plant Pest and Disease Eradication Act 1985

SCOPE

Part I, paragraph 2 of the Plant Protection Act 2007-53 of Barbados defines the products to which the Act is applicable, as “restricted articles”. Under this law “regulated article” means ’Any plant, plant product, storage place, packaging, conveyance, container, soil or any other organism, object or material capable of harbouring or spreading pests deemed to require phytosanitary measures, particularly where international transportation is involved and includes a beneficial organism’.

It further states “planting material includes plants, tissue culture, fruits, vegetables seeds and any part of a plant capable of propagation”.

“Plant Product” means any material of plant origin whether processed or not capable of harboring a plant pest.

PERMIT SYSTEM

The importation of restricted articles into Barbados is governed through a permit system.
Section 3 (1) of the Plant Pest and Disease (Import Control) Act 1995-18 states:

“No person shall import into Barbados any restricted articles – i.e. plants or plant products – unless he first applies for and obtains a permit in accordance with the provisions of this Act or regulations”

and also that: Section 3 (2)

“An application for a permit under subsection (1) shall be made to the Chief Agricultural Officer in the manner prescribed.”

**INSPECTION AND CERTIFICATION**

All plants and plant products imported into Barbados are subject to inspection before they are allowed entry into the country.

The Plant Protection Act states in section 6 (1)

“The Chief Agricultural Officer shall have every restricted article inspected:

(a) at the port of entry

(b) at the premises of the importer by arrangement of the parties; or

(c) at any other place approved by him and if satisfied that it contains no plant pest, he shall issue the importer with the prescribed certificate of inspection”.

**PROHIBITIONS**

The Plant Protection Act 2007 contains schedules of prohibited plants, plant parts and pest not to be imported into Barbados. Section 3, beginning at paragraph 14.

All pest and diseases of quarantine significance to Barbados are subject to phytosanitary measures to reduce the risks of their entry and spread in Barbados. These measures are however instituted in the least trade restrictive ways.

The actual procedures for import of restricted articles into Barbados are presented below.

**Step 1:** Importer/Agent makes an application to Plant Quarantine (PQS) for permit to import restricted article, i.e. plants and plant products in Form A of Regulations, 1997.

**Step 2:** The Plant Quarantine service acknowledges receipt of the application. The Plant Quarantine Service then makes a judgment as to whether it is routine or non-routine importation.
Step 3: If non-routine, i.e. a new product or new country, more information may be necessary whereby the PQS requests said information from the applicant.

Step 4: If non-routine, the PQS liaises with the Plant Protection Service (PPS) so that a pest risk analysis can be undertaken.

Step 5: Pest Risk Analysis is done and decision on action to be taken is made.

Step 6: The applicant is made aware of the findings and permission or denial is provided in writing.

Step 7: Disputes are resolved on a bilateral basis with the assistance of the Plant Protection Service in the country of origin of the product(s).

In cases of new applications from new countries, an on-site inspection and certification visit should augment the results of the pest risk analysis (PRA).

For trade in restricted articles to be initiated, permission to this effect would have to be given via an official document issued by the Barbados Plant Protection and Quarantine Service. This approval or denial will be anchored on sound, objective, scientific principles and the determination of acceptable level of risk or appropriate level of protection, will be based on the following, *inter alia*:

**COMMODITY**

1. The specific commodity or commodities of export interest.
2. Geographic location of country.
3. Production site of commodity and pest status.
4. List of attendant pests of commodity.
5. Pest management being undertaken.
6. Any post harvest treatment or other mitigating procedures to reduce pests.
7. Storage and security of produce after post harvest treatments.
8. Methods of transport to port of exit.
9. Export inspection and certification system in country of origin with specific reference to commodity.
10. List of trading partners with respect to specific commodity.
11. Phytosanitary and HAACP status of packing houses.
12. Agrochemicals used in the production of commodity.
13. Pest risk analysis of commodity undertaken by another party.
This is some of the data and information that will be used by the Ministry of Agriculture to determine the need for the risk assessment visit and be included in the Pest Risk Analysis.

**RISK ASSESSMENT VISIT (RAV)**

- The Applicant is informed of need for visit.
- The Applicant then makes written request to the Chief Agricultural Officer in the Ministry of Agriculture and Rural Development.
- The Plant Pathologist, Entomologist and Plant Quarantine Officer will conduct the RAV.
- Conditions of RAV as set out are:
  (a) Provision of roundtrip airline tickets.
  (b) Provision of adequate accommodation i.e. single rooms, safe environment.
  (c) Provision of per diem and any other necessary allowances.
  (d) Provision of ground transportation including pick-up and return to the airport.
  (e) Provision of necessary logistical support in visiting farms, packing houses and any other places deemed necessary.
  (f) Consultation with local plant protection officials.

- Risk Assessment visit is undertaken and report submitted to Chief Agricultural Officer.
- Decisions made and communicated to applicant and plant protection officials in country of export.
- To facilitate further trade and to reduce the necessity for repeated RAV, a bilateral phytosanitary trade protocol will be negotiated between country of export and Barbados.
### 6.16 Appendix 16 – List (with links) of adopted ISPMs (November 2012)

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### 6.17 Appendix 17 - Other References


### INTERNET LINKS

Barbados Plant Pest and Disease (Eradication) Act, Cap 266, 1985


Barbados Plant Protection Act (2007-53)

California EPA Department of Pesticide regulation – Guidance manual Methyl Bromide
http://www.cdpr.ca.gov/docs/county/training/methbrom/mebrman.pdf

CITES species database
http://www.cites.org/eng/resources/species.html

Container marks

Container tracking
http://www.seacargotracking.net/index.html

Export wood packaging Inspection service
http://www.exportwoodpackinginspection.com/FUMIGATION.php

FAO, Genetically Modified crops
http://www.fao.org/ag/magazine/0111sp.htm

International Plant Protection Convention (IPPC) Website.
www.ippc.int

Plant Pest and Disease (Eradication) Act, Cap 266, 1985

Plant Protection Act (2007-53)

USDA Treatment Manual
Appendix 18 - Some features of Methyl Bromide Fumigation

Methyl bromide is used extensively as an industrial fumigant for stored products, warehouses and ships. It is not as toxic to most insect species as are some other commonly used fumigants, but it has other properties which make it an effective and versatile fumigant. The most important of these is its ability to penetrate quickly and deeply into absorbent materials at normal atmospheric pressure. Also, at the end of a treatment, the vapours dissipate rapidly and make the safe handling of bulk commodities possible. In addition, many living plants are tolerant to this gas in insecticidal treatments. Methyl bromide is nonflammable and non-explosive under ordinary circumstances and may be used without special precautions against fire.

PROPERTIES OF METHYL BROMIDE

At normal fumigation concentrations, methyl bromide is odourless. This disadvantage is usually overcome by mixing it with a warning gas such as chloropicrin. The chloropicrin usually constitutes two (2) percent of the mixture.

TOXICITY

The effect of methyl bromide on humans and other mammals appears to vary according to the intensity of exposure. At concentrations not immediately fatal, this chemical produces neurological symptoms. High concentrations may bring about death through pulmonary injury and associated circulatory failure. The onset of toxic symptoms is delayed, and the latent period may vary between 0.5 to 48 hours, according to the intensity of the exposure and the personal reaction of the patient. Contact of the human skin with the liquid or strong concentrations of the gas may cause severe local blistering.

Methyl bromide appears to exert its principal toxic effect on the nervous system of insects. As in humans, the onset of poisoning symptoms may be delayed, and with many species of insects, definite conclusions as to the success of the treatment should be delayed for at least 24 hours. It is effective against snails and mites. However, in treatments in which living plants and flower bulbs are tolerant, the eggs of mites may be resistant, and repetition of fumigation may be necessary.

In the absence of oxygen, liquid methyl bromide reacts with aluminium to form methyl aluminium bromide. This compound ignites spontaneously in the presence of oxygen. Methyl bromide should never be stored in cylinders containing any appreciable amount of the metal aluminium, and aluminium tubing should not be used for application of the fumigant.
EFFECT ON PLANT LIFE

Methyl bromide is one of the few fumigants that may be used safely on a wide range of living plants without producing harmful effects. However, there are a limited number of genera, species or varieties of plants susceptible to injury. Because chloropicrin is phytotoxic, methyl bromide containing this gas as a warning agent should not be used on nursery stock or other living plants.

Seeds

Methyl bromide is employed as a seed fumigant because of its ability to penetrate into large consignments of sacks and bags. Under some circumstances, however, treatment with this fumigant has resulted in loss of viability. Also, germination may be delayed or the vitality of young plants impaired. Intensive investigations during recent years have disclosed that injury to germination and retardation of growth of seedlings are directly related to abnormally high temperature, dosage of fumigant, length of exposure and moisture and oil contents of the seed.

Growing Plants

Methyl bromide may be used to fumigate some growing crops to control pest organisms. Some species of plants may be fumigated only when fully dormant; others are tolerant at any normal stage of growth.

Plants in active growth are more subject to injury than are dormant plants. As long as plants are fully dormant, there is less danger of damage from methyl bromide, but at the time of breaking dormancy, there may be a period of susceptibility to injury. Coniferous evergreens are particularly liable to sustain severe damage at this critical stage. Great care must be exercised in the choice of the time for nursery stock treatments.

Flower Bulbs

Methyl bromide may be used to fumigate certain bulbs to control some insects. This fumigant is also effective against bulb mites. However, the eggs are resistant to methyl bromide, and treatments which are strong enough to kill the eggs are completely destructive to the bulbs.

EFFECT ON PLANT PRODUCTS

Fresh Fruit

Methyl bromide has been used widely for quarantine fumigations of fresh fruit. It has been found that some fruits, or certain varieties, are susceptible to injury. While some fruits are susceptible to injury by methyl bromide, others are tolerant and are treated with this fumigant in quarantine procedures. Methyl bromide is particularly useful when treatments at low temperatures are required. It is recommended that fumigation of fruit with methyl bromide should not be carried out on a commercial scale until careful preliminary experiments have indi-
cated that the particular kinds or varieties concerned are tolerant under the full range of conditions likely to be encountered in practice.

At dosages considerably lower than those needed to kill insects, methyl bromide has been successfully used for killing rats and mice in fruit storage units.

**Vegetables**

Both fresh and dry vegetables are generally tolerant to insecticidal treatments with methyl bromide. It has been used extensively for the treatment of both early and late varieties of potatoes to control the larvae of the tuber moth. Adults and pupae of the Colorado potato beetle can also be controlled without injury to the potatoes (Bond and Svec, 1977). Sweet potatoes have been found to be sensitive to Methyl bromide treatments under some conditions.

**Cereals and Milled Foods**

Methyl bromide is widely used for the fumigation of almost every type of cereal and cereal product. Because it penetrates densely packed materials, it is especially useful for the treatment of flours and meals (see Schedule P). It has been noted that bread made from flour fumigated with excessive dosages of methyl bromide may have a foreign odour. It would now appear that some taint is possible even at dosages normally used commercially for insect control. This tainting usually takes the form of abnormal odours when the hot loaves are removed from the oven.

**Nuts and Shelled Nuts**

These are treated regularly with methyl bromide because they are often best suited for bulk treatment.

**Dried Fruit**

Methyl bromide has been used extensively in recent years for the atmospheric or vacuum fumigation of dried fruit of all kinds. It is well suited for this purpose because it penetrates densely packed materials and diffuses away rapidly after treatment.

**Other Foodstuffs**

The fumigation of some foodstuffs with methyl bromide may result in the creation of undesirable taints or odours. The following materials should not be exposed to methyl bromide or should be exposed only after conducting preliminary tests with small samples:

- iodized salt, stabilized with sodium hyposulphite
- certain baking sodas, salt blocks used for cattle licks or other foods containing reactive sulphur compounds
- full fat soya flour
- sponge rubber
- foam rubber as used in rug padding, pillows, cushions and mattresses
- rubber stamps and similar forms of reclaimed rubber
- furs, horsehair and pillows (especially feather pillows)
- leather goods, particularly white kid or any other leather goods tanned with a sulphur process
- wool lens, especially angora; some adverse effects have been noted on woolen socks, sweaters and yarn
- viscos rayon, made by a process that uses carbon disulphide
- cinder blocks or mixtures of mortar; mixed concrete occasionally picks up odours
- charcoal, which not only becomes contaminated but absorbs great amounts of methyl bromide and, thus, reduces effective fumigant concert rations
- paper that has been cured by a sulphide process and silver polishing papers
- photographic chemicals, not including cameras or films
- rug padding, vinyl, cellophane
- any other materials that may contain reactive sulphur compounds
- Methyl bromide decomposes into hydrobromic acid, among other products, in the presence of a flame; this acid is extremely corrosive to metals and destructive to plants

**PRECAUTIONS**

*Concentrations Toxic to Humans*

Persons should not be exposed continuously to concentrations of this gas in excess of five (5) ppm. Daily exposure to concentrations of 20 to 100 ppm of methyl bromide can quickly bring about severe neurological symptoms. Exposure for only a few hours to concentrations of 100 to 200 ppm may cause severe illness or death. It is not advisable, therefore, for persons to remain in any atmosphere which gives a positive reaction for methyl bromide in the flame of the detector unless properly protected by a respirator.

*Absorption of Vapours through Skin*

Medical literature contains references suggesting that methyl bromide poisoning may follow absorption through the skin. It is, however, probable that this may not occur in exposure to concentrations and times given in the preceding paragraph, for which protection is given by the respirator (Butler et al, 1945).
**Contact of Liquid with the Skin**

Prolonged contact of liquid methyl bromide with the skin produces severe blisters similar to those caused by burns or extreme chilling. Great care should be taken to avoid spilling liquid methyl bromide on clothes or footwear. Leather or rubber boots, shoes and gloves are likely to retain the liquid and hold it in contact with the skin. Since there is no particular sensation produced by such contact, methyl bromide may stay in contact with the skin for extended periods without an awareness that this has occurred.

As soon as possible after methyl bromide is spilled on clothing or footwear, it should be removed and thoroughly aired. If methyl bromide has remained in contact with the skin so that blisters form, the blisters should be left intact and the area covered with a sterile petrolatum dressing. When working with methyl bromide, gloves, bandages or occlusive dressings should not be worn. If liquid is spilled on the hands lower arms or other exposed areas of skin, it will evaporate quickly. However, the parts touched should be washed with soap and water immediately.

**FIRST AID**

There is no known antidote for methyl bromide poisoning. Also, because the onset of symptoms is usually delayed, there are no specific procedures to bring about immediate recovery. However, there are certain well-defined symptoms which, except in cases of exposure to high and rapidly fatal concentrations, may serve as preliminary warnings of initial poisoning. If any of the symptoms listed below are experienced during or after exposure to methyl bromide, the person affected should leave the vicinity and report immediately to a physician. **Important:** These symptoms may not present for periods of up to 45 hours.

**Possible symptoms of methyl bromide poisoning are as follows:**

- nausea and vomiting
- loss of appetite
- dizziness
- abdominal pain
- double or blurred vision
- impaired, slurred speech
- unusual fatigue
- mental confusion
- headache
- convulsions
If the affected individual is seriously poisoned, it is advisable for all other members of the crew to place themselves under medical observation immediately.

6.19 Appendix 19 - Requirements for Import Applications

An application for an import permit SHALL only be considered if relevant scientific and other information is provided. The scientific information may be provided by the importer/agent, the Competent Authority (National Plant Protection Organisation) or it may be available to the NPPO (Barbados) through other sources. The following information about the import must be provided on the application:

- The specific commodity or commodities of interest (Scientific name including order, sub-order, genus, species, sub-species and variety/cultivar where applicable)
- Common name(s)
- The purpose (e.g. consumption, propagation, research, processing) of importation
- Country (ies), zone(s), state(s), region(s), province(s), district(s) of origin where applicable

Applicants may also be asked to provide additional information on the goods to be imported. This information may include but is not limited to areas such as the distribution records of pests associated with proposed import, treatment(s) the goods have undergone, production and processing methods etc. Proposals to import plants or plant goods may also require more specific information, including the following:

- List of attendant pests of commodity
- Plant pest(s) of interest
- Scientific names of plant pests, including authors
- Classification of plant pests (order, family etc)
- List of trading partners/export destinations with respect to specific commodity and existing protocols
- Production site of commodity and pest status in country of origin
- Cultivation methods
- Pest management and general surveillance programs
- Precautions that will be taken to prevent the spread of a pest
- Sourcing goods from pest free zones and/or other existing relevant phytosanitary measures
• Any harvesting methods post harvest treatment or other mitigating procedures to reduce pests
• Internal legislative restrictions (pest free areas) or other domestic legislation
• Synonyms commonly used
• Hosts (including variety if relevant)
• Plant parts attacked
• Symptoms/damage
• Distribution (within country)
• Prevalence (common, occasional or rare)
• Storage and security of produce after post-harvest treatments
• Methods of transport to port of exit
• Export inspection and certification system in country of origin with specific reference to commodity
• Phytosanitary and HAACP status of packing houses
• Agrochemicals used in the production of commodity